FEAR AND LOATHING IN THE AIR:

COMBAT FEAR AND STRESS IN THE AIR FORCE

BY

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The undersigned certify that this thesis meets masters-level standards of research, argumentation, and expression.

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ABSTRACT

This thesis is about the Air Force's organizational response to acute combat fear and stress—past and present. Despite the practical experience of dealing with this issue from World War II to Vietnam, the Air Force's response has become muddled in recent years. Anecdotal evidence indicates that some airmen have proven unable or unwilling to do their duty in the air, but little data exists to corroborate the stories or record the response.

In order to answer a series of related questions about the genesis and state of the Air Force's organizational response to acute combat fear and stress, I have broken this work into four parts: an examination of the related literature on combat stress; a review of the Air Force's actions in World War II, Korea, and Vietnam; a look at the actors and policies that form the contemporary organizational response; and a report on the formulation and results of the Combat Stress Survey—an instrument designed to provide contemporary data on the subject.

This study demonstrates that the Air Force's organizational response to combat fear and stress has been a combination of medical and administrative policies designed to balance the needs of affected pilots with the war-fighting demands of the Air Force. Unfortunately, there is little balance in the current approach to the issue. Survey results indicate that commanders—the first line of defense—have proven unwilling to take long-term administrative actions in the aftermath of stark failures. The Air Force needs to confront this issue with discussion, Air Force-wide policy, and education so that commanders have the requisite tools and knowledge to deal with a problem that is likely to return in future conflicts.

CONTENTS

Introduction

Fear is to the mind as pain is to the body—both fear and pain have an evolutionary value.

- Aviation Neuropsychiatry

This thesis is about fear and stress, air combat, and organizational response. It is about the Air Force and the men and women who fly in combat. It is a small contribution to a body of work that reaches across generations and services, and, with any luck, it will shed some light on a subject that the Air Force seems content to leave in the shadows.

War has a way of highlighting man's weaknesses—both physical and mental. Combat reveals the limits of human ability that, once crossed, usually result in significant losses in individual performance or personnel. Airmen are not immune to these physical and mental limits, but the emotions and experiences of combat differ wildly among individuals. For some, combat heightens their senses and sharpens their reflexes; but for many, an increase in the intensity and frequency of combat exposure cause a corresponding increase in fear and stress. As this exposure accumulates, or is punctuated by a particularly harrowing set of circumstances, some individuals begin to question their commitment, their future, and their mortality. Some can stop functioning effectively or refuse to fly altogether. In these cases, the Air Force is challenged to simultaneously meet individual medical needs and organizational war-fighting demands. It does so with policies, procedures, and a variety of tools to help the individual cope with their particular problems and still fulfill the mission. Taken together, these policies, procedures, and tools form what is called the organizational response.

Unfortunately, the Air Force's organizational response to combat fear and stress has become muddled in recent years. Like individuals, organizations sometimes forget things, and the Air Force appears to have forgotten about combat fear and stress. It is not a topic of discussion among fighter pilots, and the Air Force does not provide commanders with the educational background or tools to call upon when a pilot is overcome by fear and stress. This neglect may be due to the relatively short duration and low intensity of recent conflicts or it may speak to the difficulty of discussing the subject

among airmen. Regardless of the cause, this work is an attempt to understand the Air Force's response—past and present—to acute combat fear and stress.

Background

In addition to its more obvious physical destruction, combat has also produced casualties of the mind. Fear, anxiety, and debilitating fatigue are some of the by-products of battle. In World War II, Korea, and Vietnam, the Air Force used a variety of tools to mitigate the harmful effects of combat stress. One example was dispensing alcohol ("mission whiskey") to calm the nerves of airmen after flying combat missions. Another tool was the limit on the number of sorties airmen flew in combat. During World War II, for example, Eighth Air Force bomber crews stationed in England were initially expected to complete 25 missions in a combat tour and fighter pilots were expected to fly a minimum of 150 hours.[1] Similarly, in Vietnam a combat tour for F-4 and F-105 pilots was either 12 months "in country" or 100 missions in North Vietnam—whichever came first. For those stationed at bases in South Vietnam, missions north were a rarer occurrence and their tours usually lasted a full year. Other airmen flying out of bases in Thailand regularly flew missions into North Vietnam and some pilots completed 100 missions in as little as seven or eight months.[2]

At first glance, policies establishing mission counts or advocating the use of alcohol to calm nerves appear to be a tacit acknowledgement of the limits of human endurance, but was that the rationale for their existence? If the limits of human endurance require these policies, why are they not found in the post-Vietnam era? Has something else about air combat or the combatants changed since 1973? If so, what does this tell us about the future? In essence, this paper is motivated by a desire to understand the creation of these policies and the rationale behind their application—not with the intent of second-guessing airmen of the past, but with the intent to educate future airmen. It is an attempt to answer a number of tightly related questions about the way the Air Force deals with acute combat fear and stress.

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[1] Mark K. Wells, *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War* (London: Frank Cass, 1995), 103.

[2] Wayne Thompson, *To Hanoi and Back: The U.S. Air Force and North Vietnam, 1966-1973* (Washington, DC: Smithsonian Institution Press, 2000), 10.

Research Questions

The primary research question is:

- How does the Air Force deal with pilots who cannot handle the stress of flying in combat?

In order to answer that question, a number of related issues are examined. Among them:

- What did the Air Force do to pilots who experienced acute combat fear and stress in the past—World War II, Korea, and Vietnam?
- Is acute combat fear and stress a problem in today's Air Force? To what extent?
- Are there different organizational responses—formal vs. informal? How are these articulated and carried out? What is the relationship between them and how has it changed over time?
- What does the Air Force do to prepare pilots and their commanders for combat stress? Should the Air Force do more or less?

The answers to these questions are essentially descriptive in nature. They speak to the past more so than the future, and both the problem and the range of solutions applied in a historic and contemporary context will help understand rather than predict behavior. Nevertheless, this description serves as a point of departure to discuss some of the ways that the Air Force can move ahead. An attempt to model the organizational and cultural dynamics of the Air Force with the goal of forecasting how combat fear and stress will be dealt with in future conflicts is beyond the scope of this work.

Methodology

The first step in this process and the first chapter is a review of the relevant literature on combat fear and stress. While countless books have been written about combat and psychology, the number of works specifically relevant to aviation combat psychology is quite small and the literature generally falls into one of three categories—historical review, clinical analysis, or personal memoirs. A discussion of this literature and the various terms used to describe acute combat fear and stress will set the stage for the remainder of the study.

The second chapter examines the historical record from World War II, Korea, and Vietnam as a way to understand how the Air Force coped with combat fear and stress in the past. Official correspondence and policy letters shed light on the different approaches to the problem. Senior leaders tasked with running a large, complex organization walked a fine line to simultaneously ensure that manning levels were maintained, administrative procedures were followed, and medical needs were met. Meanwhile, commanders acting as the first line of defense (or as the first to know about the problem) were challenged to confront their own perceptions of courage and duty in the face of human weakness. Their actions emerge from this chapter as a key aspect of the Air Force's organizational response.

Chapter 3 discusses the contemporary thinking and policy on acute combat fear and stress. It focuses on three different perspectives—fighter pilots, commanders, and health professionals—in an effort to explain why this subject is presently ignored. In keeping with the idea that commanders play a crucial role in the organizational response, this chapter also addresses the various tools that a commander has available for dealing with affected pilots. These tools range from simple rest to counseling to formal proceedings that can result in an aviator's discharge from the Air Force.

Chapter 4 addresses the question of whether acute combat fear and stress occurs in today's Air Force. The Combat Stress Survey was developed and administered to fighter pilots throughout the Air Force—active duty, reserve, and guard—to discover the extent of the problem. The survey design, administration, findings, and shortcomings will be discussed in detail.

Finally, I will review the answers to the research questions and conclude by suggesting some considerations for future airmen as they educate themselves and others about combat fear and stress, develop effective policy, and strive to maintain a lethal fighting force.

Research Limits

Without choosing to pursue a clinical analysis (and without the requisite educational background to do so), a study of acute combat fear and stress quickly faces a

couple of serious challenges. The first is to define the topic and the second is to place limits on the scope of the research.

Defining acute combat fear and stress presents the first challenge. Even clinical descriptions point to a collection of symptoms that, taken in part or in whole, can be called "war neurosis," "combat fatigue," "lack of moral fibre," "combat stress," or "acute combat reaction."[3] The symptoms, however, are not exclusive to acute combat fear and stress and the variation in terminology can be problematic. Nevertheless, for the purposes of this study acute combat fear and stress indicates a condition or reaction that renders a pilot unable to perform his or her duties. It includes obvious physical manifestations more commonly associated with acute fear—shaking, nausea, and sleeplessness—but it also includes psychosomatic reactions and symptoms that are harder to quantify such as undermined confidence or fatalism. Acute combat fear and stress can affect a pilot's will and desire to fly and can vary significantly in intensity and duration. It can happen before, during, or after a sortie. Ultimately, if mission accomplishment is delayed or affected, then it meets the standard of acute combat fear and stress.

It is also important to place limits on the research topic. Apart from the desire to be descriptive rather than prescriptive, it is necessary to narrow the study population. In this case, the research is limited to Air Force pilots and weapon system officers (WSOs). Undoubtedly, the Navy and the Marine Corps have pilots whose capabilities, mannerisms, and weaknesses are similar to Air Force pilots, but constraints of time and energy demand their exclusion—especially in light of the different policies and organizational responses of the Navy and Marine Corps.

The type of aircraft flown in combat is a variable that changes over time in this study. A review of Air Force policies and practices from World War II, Korea, and Vietnam is designed to examine the historical organizational response to the issue of acute combat fear and stress. As such, it will encompass both bomber and fighter crews.

Contemporary discussion, however, revolves around fighter aircrew only. This is not because fighter aircrews are the only ones exposed to combat. In fact, other communities (special operations, for instance) are exposed to combat much more

[3] Alan Stokes and Kirsten Kite, *Flight Stress: Stress, Fatigue, and Performance in Aviation* (Brookfield, VT: Ashgate Publishing Company, 1994), 213.

frequently than the fighter community. Instead, the selection serves to narrow the focus of the research and reflect the interests of the author. It is premature and incorrect to infer that different pilot communities in the Air Force deal with combat fear and stress in the same or in a qualitatively different manner, as an analysis of the various pilot cultures is beyond the scope of this work. A full accounting will have to remain an area for future research. A final note on the issue of taxonomy is that the nature of combat varies significantly across time, place, and service. The emphasis of this research does not accord air combat or fighter pilots a degree of preeminence that might otherwise be inferred.

The reader will also note that the term "fighter pilot" is used throughout the text. This is not meant to denigrate or deny the contributions of WSOs and navigators. Instead, the term is used solely for economy of expression. The discussion, data, and conclusions apply equally to both pilots and WSOs, without any differentiation in degree or kind.

Chapter 1

Literature Review

> *Certainly, my skill had improved with each mission, but the odds didn't change and risk didn't have a favorite mission.*
>
> *- Ken Bell*

The subject of acute combat fear and stress is not new. Fear is a fundamental human emotion, and it occurs for a variety of reasons. The challenge here is to narrowly define the subject and place it in a historical and literary context. Some literature reviews demonstrate the strengths and weaknesses of existing arguments, but I am forced to take a different approach in this chapter. There are no works that address the Air Force's organizational response to the subject of combat fear and stress in fighter pilots. Instead, I have canvassed a broad section of aviation and combat psychology literature to provide the historical and literary context that will enable the remaining chapters

I have divided this chapter into two parts. The first part explicitly defines acute combat fear and stress and explains the history and evolution of some related terms. This section also addresses the utility of these terms from an organizational response perspective. The second part of the chapter examines the existing literature on combat fear and stress. Because this literature does not directly address the topic, the purpose is to provide context and familiarity with the different sources of information on combat stress before moving on.

Definition

As stated in the introduction, I use the term *acute combat fear and stress* to capture a condition or reaction that renders a pilot unable to perform his or her duties. It includes obvious physical manifestations more commonly associated with acute fear—shaking, nausea, and sleeplessness—but it also includes psychosomatic reactions and symptoms that are harder to quantify such as undermined confidence or fatalism. It can affect a pilot's will and desire to fly and it can vary significantly in intensity and duration. The reactions can happen before, during, or after a sortie, and the ultimate test is whether

mission accomplishment is delayed or adversely affected. Three basic elements make up acute combat fear and stress, all of which must exist in order to meet the definition: exposure (or potential exposure) to combat, physical or psychosomatic symptoms, and negative impacts on mission accomplishment.

This term, acute combat fear and stress, and its definition describe a state of being. As such, it is not a predisposition or personality trait, nor is it necessarily a permanent label. It describes symptoms that can potentially get in the way of the larger objective—mission accomplishment. Including the element of mission accomplishment gives away the fact that the present study is motivated less by a desire to mine the depths of psychological well-being than it is to ensuring that the human component of our military machine delivers in a time of crisis. Psychologists and psychiatrists are better suited to exploring why and how men and women feel fear and stress, and their important academic work is well beyond the scope of this study.

This definition is also somewhat imprecise and messy. As previously stated, it is described by symptoms, but it is also broad with respect to those symptoms. My own personal experiences—as well as numerous interviews, discussions, and research—point to a diverse range of combat experiences requiring a broad definition to capture all the possible responses. Pilots experiencing nightmares on the eve of combat, leaving the combat area at the first sign of enemy fire, refusing to fly in a combat theater, and countless other variations on the human experience all necessitate an inclusive definition.

The term "acute" was chosen to differentiate between the normal and expected stresses and fear that accompany a dangerous endeavor and more incapacitating responses. The "fight or flight response" is well-documented and appreciated almost universally as an important evolutionary factor, but when a person is overcome by the internal conflict between survival and task performance, the organization or unit becomes concerned. Again, this inability to perform becomes the ultimate test of whether a pilot's experience or episode meets the criteria of acute combat fear and stress. The inclusion of both "fear" and "stress" was also meant to cast a wide net. Arguably, stress results from the presence of fear, but the manifestations of stress in the absence of fear can be equally debilitating and harmful to mission accomplishment.

This term and definition did not get pulled from thin air. A wide body of work on combat stress exists (albeit largely focused on ground combatants), and the challenge was to develop a term with characteristics recognizable to pilots, clinicians, and casual readers. The term was used (but not explicitly defined) in the survey instrument that was administered to fighter pilots and reported on in the final chapter of this work. The inclusive language helped encourage pilots to document a variety of episodes that might not otherwise have been recorded. Accessibility to clinicians and casual readers has the obvious benefit of contributing to the existing body of literature on this subject.

Related Terms

The terms used to describe acute combat fear and stress—along with other more clinically specific phenomena—have gone by many names. As early as the sixteenth and seventeenth century, military doctors in Europe had developed words like *estar roto* (to be on the point of breakdown) and *nostalgia* to "characterize the situation of soldiers who could no longer endure combat."[4] The latter term was still in use during the American Civil War, but by the First World War other terms came into use.[5] The most recognizable and literal term was *shell shock*, but *war neurosis* was used in conjunction with underlying questions about the character and predisposition to cowardice of the soldiers suffering from mental trauma.[6]

For airmen in World War I, the British coined the term *staleness* to describe symptoms that included, among other things, trembling and an inability to sleep or recognize danger.[7] The British did not initially recognize the psychological nature of the problem—they thought it resulted from oxygen starvation associated with high altitude flight—but similar symptoms were seen by the Germans and French as well. Although statistical data is limited, a medical examination in one French unit during 1918 resulted in 15 of 92 men being declared unfit for aviation duty.[8] By the time of the Second World War, additional terms such as *battle stress*, *combat exhaustion*, and *combat fatigue* had

[4] Hans Binneveld, *From Shell Shock to Combat Stress,* trans. John O'Kane (Amsterdam: Amsterdam University Press, 1997), 3.
[5] Binneveld, 3.
[6] Alan Stokes and Kirsten Kite, *Flight Stress: Stress, Fatigue, and Performance in Aviation* (Brookfield, VT: Ashgate Publishing Company, 1994), 213.
[7] Lee Kennett, *The First Air War: 1914-1918* (New York: The Free Press, 1991), 145-46.
[8] Kennett, 146.

come into vogue. Some of these changes reflected a broadening of the combat experience beyond the trenches of World War I, but some terms evolved in the midst of administrative as well as medical attempts to come to terms with emotional casualties.

For example, in the U.S. Eighth Air Force it quickly became obvious that fliers grounded for phobic issues could serve (and sometimes advance in rank) in jobs that required aviation expertise but not combat flying.[9] This had an unsettling effect on other fliers, and a system with three categories was designed to capture both the medical and administrative disposition and the treatment requirements of the affected individual. The terms *secondary flying fatigue* and *operational exhaustion* described men who had endured a "creditable amount of trauma" and who were medically disqualified but should not have administrative action taken against them; *lack of moral fiber* (also used extensively by the British), *lack of intestinal fortitude*, and *fear of flying* described those who had endured "too little trauma" and should have administrative action taken against them; and *psychosis* described cases beyond any administrative control and which typically involved "detectible signs of maladjustment."[10]

In the personnel regulations and policy letters, *fear of flying* described men who were physically qualified for combat but were unable or unwilling to perform.[11] The term was designed to recognize the impact of emotional conflicts on flying effectiveness, but a degree of specificity was lost when it replaced the variety of more colorful terms that described the cause or specific nature of the emotional disturbance.[12] In other words, regulations used the same term to describe a first-time aviator who discovered they disliked flight and a seasoned pilot who developed a dislike of combat. The language survives even today with all of the attendant ambiguity, and the regulations that cover administrative actions related to pilots have changed very little through the years.[13]

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[9] Mae Mills Link and Hubert A. Coleman, *Medical Support of the Army Air Forces in World War II* (Washington, DC: Office of the Surgeon General, USAF, 1955), 673.
[10] Douglas D. Bond, M.D., *The Love and Fear of Flying* (New York, NY: International Universities Press, Inc., 1952), 156-57. For additional discussion on this classification system see Link and Coleman, 672.
[11] Link and Coleman, 673-74.
[12] Col Lucio E. Gatto, "Understanding the 'Fear of Flying' Syndrome," *United States Armed Forces Medical Journal* 5, no. 9 (September 1954): 1093-1116 and 1267-1289.
[13] A more complete discussion of the Air Force regulations that cover the administrative actions associated with *fear of flying* can be found in Chapter 3.

Outside of aviation, modern parlance seems to have settled on *combat stress* and *combat stress reaction* to describe the wide array of behaviors that negatively impact men and women in battle. *Combat Stress*, a publication produced jointly by the U.S. Army, Navy, and Marine Corps, puts it this way: "Service members exposed to danger experience physical and emotional reactions that are not present under more tranquil circumstances. Some reactions sharpen abilities to survive and win; other reactions may produce disruptive behaviors and threaten individual and unit safety. These adverse behaviors are collectively called *combat stress reaction*" (emphasis in original).[14] The same publication defines *combat stress reaction* as "the common, predictable, negative, emotional and physical reactions of normal people to the 'abnormally high' stressors of combat, which by definition interfere with mission performance or well-being."[15] A more precise definition is not to be found. Of note, this pamphlet is specifically meant to be a resource for small-unit leaders.

Interestingly, the Air Force did not participate in the aforementioned pamphlet, and it does not appear to have a comparable resource for unit commanders. The only resources on the subject are found in the medical community. In *The Flight Surgeon's Guide,* developed by the USAF School of Aerospace Medicine to augment a flight surgeon's basic medical training, the term *combat fatigue* is used to describe symptoms that "arise from internal conflicts between instinct (emotion) and willpower."[16] The guide also uses terms such as *phobic fear of flying* and *acquired fear of flying* to describe fear and anxiety related to aviation in a non-combat environment, but, for obvious reasons, fighter pilots tend to be well past any potential issues with fear of flying by the time they reach combat.[17]

The other medical resource is the *Waiver Guide* which provides a short synopsis of, and waiver considerations for, anxiety disorders among other things. The section on

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[14] Army Field Manual (FM) 6-22.5, Marine Corps Reference Publication (MCRP) 6-11C, Navy Tactics, Techniques, and Procedures (NTTP) 1-15M, *Combat Stress*, 23 June 2000, 2.
[15] *Combat Stress*, C-2.
[16] David R. Jones, MD, Royden W. Marsh, MD, John C. Patterson, PhD, Tim W. Sowin, MD, Fred E. Drummond, PhD, Daniel R. Orme, PhD, and Joseph D. Callister, PhD "Aviation Neuropsychiatry" (Brooks AFB, TX: USAF School of Aerospace Medicine, Clinical Sciences Division, June 2000), 38. Also, on-line, Internet, 28 February 2005, available from http://wwwsam.brooks.af.mil/af/files/fsguide/HTML/00_Index.html.
[17] Jones, et al., 23-25.

anxiety disorders is prepared by the neuropsychiatry staff, and it uses *fear of flying* to denote "a non-phobic fear based on uneasiness, lack of motivation, feelings of inadequacy, rational decision, life circumstances, etc."[18] An expanded discussion of the policy ramifications and language in the *Waiver Guide* follows in Chapter 3.

As previously stated, Air Force regulations still use *fear of flying* to describe a broad range of behaviors that may or may not be related to combat. From an organizational response perspective, using broad terms offers a certain amount of utility. They provide simplicity, imply clarity, and allow for easy categorization. The acknowledged diversity of experience makes it difficult and even problematic to parse the subject of acute combat fear and stress with numerous medical terms that may or may not imply different courses of action to commanders. In other words, if the resulting administrative courses of action are the same—removal from flying status or reinstatement—then it hardly matters which medically-accurate label is applied to the pilot in question. The point here is to contrast the medical approach, which values accuracy and specificity for the purpose of properly treating an individual, with the administrative approach, which values clarity and procedural simplicity for the purposes of efficiency and fairness.

Extant Literature

Any academic review of the literature on acute combat fear and stress quickly confronts the problem of properly bounding the subject. If hewn too closely to the definition, relevant ideas and writing can be left out; but casting the net too wide makes the undertaking both cumbersome and unrewarding. The subject of acute combat fear and stress in USAF fighter pilots has the initial appeal of narrowly defining itself, but for perhaps obvious reasons, the literature on this topic is quite thin. The literature on this subject can generally be divided into three broad categories: historical analysis (what happened during a particular conflict), clinical analysis (why it happens and what to do about it), and personal memoirs (it happened to me or somebody I knew). Rather than

[18] United States Air Force USAFSAM-FEC Clinical Services Division, *Aerospace Medicine Waiver Guide,* n.p., on-line, Internet, 29 December 2004, available from http://wwwsam.brooks.af.mil/.

detail the specifics of each work, this review will focus on the context and underlying importance of the literature in question.

The first broad category of literature, historical analysis, captures the experiences of airmen in combat. Due to the large population of air combatants, the preponderance of this literature focuses on World War II. Two large volumes that were produced in the wake of the war are *Medical Support of the Army Air Forces in World War II* and *The American Soldier: Combat and its Aftermath.*[19] While dated and far-reaching in scope, these both contain useful discussions about aircrews during the war. In the case of the former, the emphasis is on treatment and therapies, while the latter captures the statistical data relating to morale, sortie counts, and losses. Both works tend to lump together aircrews, regardless of rank or aircraft category, and it is difficult to establish or characterize the behavior of fighter crews for later comparison. Nevertheless, both volumes represent some of the earliest work on the subject of airmen and combat stress. *The American Soldier* also provides an interesting discussion about the definition of a "tour of duty" and its affects on combat motivation—a subject that will be expanded in the next chapter.

A much more recent, but equally important, work on the subject of World War II airmen is Mark Wells' *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War.*[20] In this comparative history of the British Bomber Command and the American Eighth Air Force, Wells concludes that airmen (regardless of nationality) bravely faced the dangers of combat on a daily basis because of the camaraderie and sense of cohesion that developed in units and crews.[21] This, more than leadership or differences in medical treatment, explains the relatively low percentage of emotional casualties in the U.S. Army Air Forces—approximately 4,000 out of more than 100,000 men who served in Eighth Air Force during its bomber offensive.[22]

Beyond World War II, the literature is much less focused. Passing references to fear of flying and combat stress can be found in historical pieces about airmen, but

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[19] Mae Mills Link and Hubert A. Coleman, *Medical Support of the Army Air Forces in World War II* (Washington, DC: Office of the Surgeon General, USAF, 1955); and Samuel A. Stouffer et al., *The American Soldier: Combat and its Aftermath, Vol. II* (Princeton, NJ: Princeton University Press, 1949).
[20] Mark K. Wells, *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War* (London: Frank Cass & Co, LTD, 1995).
[21] Wells, 210-212.
[22] Wells, 70-71.

nothing has emerged to address the issue in detail.[23] One attempt to capture and record historical data directly is a thesis entitled *Combat Aircrew Experiences During the Vietnam Conflict: An Exploratory Study* by Major Antone Gajeski. Citing the dearth of research on Vietnam aircrew combat behavior, Gajeski conducted structured personal interviews of twenty Vietnam veterans with a variety of combat experiences in fighter, bomber, and electronic combat aircraft to capture not only their experiences but their attitudes and motivations as well.[24]

Another thesis, *The Moral Domain of War: A View from the Cockpit* by Major Walter Grady Jr., also relied on Vietnam fighter pilots (in this case all F-105 pilots). Grady performed an extensive survey and used statistical analysis to validate a proposed pilot combat motivation model based on J.F.C. Fuller's theory of war. The author included a series of open-ended questions such as "How did you cope with fear?" and "What made you fly regardless of fear?" but these questions were only a small part of a much larger survey and the author did not report on the answers provided by survey respondents to the open-ended questions.[25] Instead, the findings emphasized statistical analysis of the model elements.

The next broad category of literature is clinical analyses. Clinical analyses are, in many ways, what this paper is not—an attempt by medical professionals to explain the human psyche and its reaction to flying and combat. As in the other categories, most works confront the specifics of aviation only marginally. Ben Shalit's *The Psychology of Conflict and Combat* and Gregory Belenky's *Contemporary Studies in Combat Psychiatry* are just two recent examples of these ground-centric works.[26]

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[23] For a brief discussion of how flight surgeons were used to combat fear of flying and other forms of mental illness, see John Darrell Sherwood, *Officers in Flight Suits: The Story of American Air Force Fighter Pilots in the Korean War* (New York: New York University Press, 1996), 109.

[24] Antone E. Gajeski, "Combat Aircrew Experiences During the Vietnam Conflict: An Exploratory Study" (master's thesis, The School of Systems and Logistics of the Air Force Institute of Technology, 1988), ii.

[25] Maj Walter A. Grady, Jr., "The Moral Domain of War: A View from the Cockpit" (master's thesis, USAF School of Advanced Airpower Studies, 1993), 69-80.

[26] Ben Shalit, *The Psychology of Conflict and Combat* (New York: Praeger Publishers, 1988); and Gregory Belenky, ed., *Contemporary Studies in Combat Psychiatry* (Westport, CT: Greenwood Press, 1987). For additional works that emphasize the emotional trauma of warfare, see Michael Evans & Alan Ryan, eds., *The Human Face of Warfare: Killing, Fear and Chaos in Battle* (Australia: Allen & Unwin, 2000); and Hans Binneveld, *From Shell Shock to Combat Stress,* trans. John O'Kane (Amsterdam: Amsterdam University Press, 1997).

A clinical analysis that focuses solely on aviators during World War II is *The Love and Fear of Flying* by Douglas Bond.[27] This work could be considered a historical analysis (the author's description of administrative measures falls in this category), but it is included here because psychiatric discussion forms the bulk of the work. An interesting characteristic of this work is the reference to danger and death that seems to pervade the author's perception of aviation. While understandable based on the safety record of aviation at the time (1952), it also biases the author's position. The contemporary reader is likely to be amused by references to aviation as a "supernatural achievement" and quotations such as, "The pilot is of a race of men who since time immemorial have been inarticulate; who, through their daily contact with death, have realized, often enough unconsciously, certain fundamental things. It is … only in the air that he knows suddenly he is a man in a world of men."[28]

A more contemporary study of the psychology of air combat and stress is *Flight Stress: Stress, Fatigue, and Performance in Aviation* by Alan Stokes and Kirsten Kite.[29] While the authors devote the majority of the book to more general concerns of aviation stress, they also include a brief discussion of combat stress. In this section, they provide a useful discussion of the causal factors of combat stress—either single, very traumatic events, "prolonged exposure to more minor tribulations," or "prolonged exposure suddenly followed by a more traumatic event"—and a short overview of some of the competing theories about combat stress.[30] The most provocative contribution is a discussion about where the burden of proof lies in explaining combat stress—that is, should "the fearfulness of the minority" be the locus of investigation or "the relative fearlessness of the majority?"[31]

A final, non-aviation-related sub-category of clinical analysis deals with how humans deal with the impact of warfare and killing. These works are, at best, on the periphery of the subject matter, but they serve to inform the reader. Examples of these works include *On Killing* by Dave Grossman and *The Scars of War* by Hugh

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[27] Douglas D. Bond, M.D., *The Love and Fear of Flying* (New York: International Universities Press, Inc., 1952).
[28] Bond, 15-17.
[29] Alan Stokes and Kirsten Kite, *Flight Stress: Stress, Fatigue, and Performance in Aviation* (Brookfield, VT: Ashgate Publishing Company, 1994), 213.
[30] Stokes and Kite, 214-215.
[31] Stokes and Kite, 223.

McManners.[32] McManners focuses briefly (a single chapter) on air war and its participants, but the thrust of his effort lies in the emotional trauma of warfare rather than why and how individuals suffer or recover from episodes of combat stress.

The final category of literature that can be considered useful to developing an understanding of acute combat fear and stress is personal memoirs. Often rich in detail and sometimes raw in emotion, the authors generally set out to accomplish little more than describe their personal slice of the conflict. They usually acknowledge that even the slightest differences in locale or timing could produce a different memoir, and this *mea culpa* serves to disarm critics and readers alike. At the same time, the author's agenda often confines the analysis of the conflict to his perspective at the time of the conflict. Ken Bell, an F-105 pilot during the Vietnam War, provides an example of this in the preface to his account of the missions he flew over North Vietnam, "This is a book about people and feelings and not about national policy…. This is about those who fought valiantly at the end of the policy whip. It is about the pilots and crewmen who found enough courage and patriotism each day to risk their lives flying in the hostile skies over North Vietnam. This book is written for those who shared that extraordinary experience with me and especially to honor my fellow pilots who never came home."[33]

While they tend to do a good job capturing human emotion, these memoirs are not without shortcomings. The evidence is typically anecdotal and the authors' attention to the subject of acute combat fear and stress is incidental at best. There is typically a broader emotional aspect related to going to war and Bell's account is an example of this treatment. He flew F-105's during 1966 and 1967, a period when 198 F-105's were lost in combat in Southeast Asia (more F-105's than during the rest of the Vietnam War combined).[34] From the physical anxiety of his first combat sortie to the paradoxical feelings of relief and disappointment of his 100th mission, his memoir echoes a common theme—combat is a harrowing experience to the uninitiated that can become as compelling as it is scary. In talking about his final combat mission and the emotions that accompanied it he says, "I felt relieved but the relief was accompanied by melancholy

[32] LTC Dave Grossman, *On Killing* (Boston, MA: Little, Brown and Company, 1995); and Hugh McManners, *The Scars of War* (London: Harper Collins Publishers, 1993).
[33] Kenneth H. Bell, *100 Missions North: A Fighter Pilot's Story of the Vietnam War* (McLean, VA: Brassey's, 1993), ix.
[34] Bell, figure included in illustrations.

and despair. The danger was finally over, but so was the excitement and feeling of belonging."[35] He also says, "Like any event we look forward to with great anticipation, my final mission had come at last and was over too quickly. I felt empty, and was mentally and physically exhausted."[36]

Additional memoirs in this area and the Vietnam War include *Going Downtown* and *Thud Ridge* by Jack Broughton and the recently published *When Thunder Rolled: An F-105 Pilot Over North Vietnam* by Ed Rasimus.[37] These are fascinating reading and they place the interested reader in the emotional and factual context of combat aviation. In recounting the combat experience, these authors paint a picture of the typical fighter pilot that is both instructive and potentially harmful in that it runs the risk of being too-easily caricatured.

Conclusion

Defining acute combat fear and stress is a necessary evil in a work of this nature. Clinicians are likely to find fault with the broad and symptomatic nature of the definition provided, but the focus of the research and the audience for this thesis lies well outside of the clinical world. The utility of relating mission impact to symptoms is that the litmus test for consideration and reporting is fairly evident. Human emotions and experiences are infinitely varied, and the purpose of this work is to encompass rather than strictly exclude. There is certainly room for additional research in this regard.

With respect to the extant literature, the subject makes for a compelling, but somewhat unfocused, body of work. Historical analyses, clinical analyses, and personal memoirs all provide a piece of the puzzle, but a thorough examination of the organizational response to acute combat fear and stress is missing. This thesis is intended to fill that gap, and the next step is to explore and recount the Air Force's record of dealing with acute combat fear and stress from World War II through Vietnam.

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[35] Bell, 58-59 and 283.
[36] Bell, 283.
[37] Jack Broughton, *Going Downtown: The War Against Hanoi and Washington* (New York: Orion Books, 1988); Jack Broughton, *Thud Ridge* (Philadelphia: J.B. Lippincott Company, 1969; Friendswood, TX: Baxter Press, 1996); and Ed Rasimus, *When Thunder Rolled: An F-105 Pilot Over North Vietnam* (Washington, DC: Smithsonian Books, 2003).

Chapter 2

The Historical Record

> *In those early days of the first German war, we—the Company officers and I—did not bother about men's minds; we did what we could for their bodies. We did not ask whether a man was wearing well or if he would last. Of course he would last, why shouldn't he?*
>
> *- Lord Moran*

In confronting the primary research question—how does the Air Force deal with pilots who can not handle the stress of flying in combat?—it became evident that the historical record would play an important part in the answer. Since an organization's history shapes its response to problems, examining the evolution of the problem sheds light on the contemporary context. The historical record will set the stage for understanding the beginnings of the problem and what, if any, changes have occurred over time. This analysis will also form the basis of the central argument—the Air Force's current, muted organizational response to acute combat fear and stress in fighter pilots has a historical precedent that is reinforced by fighter pilots and their culture. This chapter is divided into three parts, each focusing on a major conflict—World War II, Korea, and Vietnam.

Before beginning, it is important to explore what constitutes an organizational response. Is it the sum total of personnel policies? Is it the application of human or material resources in response to a threat? Is it the distilled opinions of the individuals that make up the organization? In short, it can be all of these and more. What matters is the predictability and uniformity of the response. In other words, a single policy or a single person's reaction can not be described as an organizational response in the absence of a discernible and long-standing pattern of behavior from others in the organization. Such is the case here as the collective actions and policies of individuals come together to define the Air Force's organizational response.

Risk and danger have long been a component of manned flight, and the addition of aircraft to the modern battlefield in World War I added yet another degree of both. In short order, aviators were exposed to the physical and psychological traumas of combat

that had accompanied the soldier on the ground to the battlefield for millennia. However, the organizational response in the early days of combat aviation is not easily discovered in the historical record. An overall dearth of literature on combat pilots, the relatively small number of combat aviators, and an inconsistent record of classifying emotional casualties make a study of World War I aviators extremely difficult.[38] Certainly, an educated guess would parallel the emotional response of ground combatants—ranging from enthusiasm to stoic acceptance to dread—but the available evidence points to World War II as a logical starting point.

World War II

Combat aviation matured significantly in the interwar period. Technology and tactics advanced at a rapid pace, and air battles like the Battle of Britain and Pearl Harbor early in the war left observers with few illusions about the role of aviation. For the first time, hundreds of thousands of men would fight in and from the air and, as they fought, the casualties mounted. In addition to dealing with the physical casualties, commanders and physicians found themselves forced to deal with the psychological repercussions of sustained, dangerous combat flying. While the statistical evidence is somewhat imprecise, it appears that the U.S. Eighth Air Force experienced approximately 4,000 emotional casualties out of the more than 100,000 airmen who served in the command during the war.[39] Not all of these were permanent emotional casualties. In fact, records from the Eighth Air Force Central Medical Board indicate that only 1,230 men were permanently grounded for emotional disorders.[40] The balance were treated and returned to duty. The criteria established at the time used 15 days as the demarcation between temporary and permanent grounding. If a man was grounded for more than 15 days, it usually meant that he would stay out of combat for two to six months or longer, but men

[38] For a brief discussion of combat stress in World War I, including anecdotal statistical evidence, see Lee Kennett, *The First Air War: 1914-1918* (New York: The Free Press, 1991), 145-46. According to Kennett, "The numbers of airmen withdrawn from the front for this reason [combat stress] must have been considerable, but statisitics for this category of casualty are lacking."
[39] Mark K. Wells, *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War* (London: Frank Cass & Co, LTD, 1995) 71.
[40] Douglas D. Bond, M.D., *The Love and Fear of Flying* (New York: International Universities Press, Inc., 1952) 183-4.

grounded for less than 15 days often returned to flying combat missions with their unit and crew.[41]

In the Pacific theater, as many as 30 percent of the non-battle casualties were considered psychiatric and "medical officers estimated that 20 percent of all Air Force personnel who had been in the theater over 18 months were suffering from varying degrees of chronic fatigue and exhaustion, or definite psychoneurotic conditions."[42] These numbers may appear significant, but they are an incomplete picture. They are also indicative of the problem with statistical data. Chronic fatigue and exhaustion are different from "psychoneurotic conditions" (again, an issue of terminology and lack of precision), but the reporting makes it impossible to paint a more accurate picture.

As commanders struggled to deal with the problem of combat fear and stress, they enlisted the aid of the medical community. Their professional expertise and dispassionate diagnosis gave credence and structure to one aspect of the decision-making process that commanders went through on a daily basis—determining who was fit to fly. Similarly, when emotional casualties started to appear, commanders expected their flight surgeons to provide medical answers and perform a crucial role in what would evolve into a long-standing administrative response—the Flying Evaluation Board (FEB).

The medical response to combat fear and stress evolved over time and included attempts at classification as well as treatment by trial and error. The medical community employed a holistic approach that acknowledged the interrelated factors of "morale, fatigue, and certain psychiatric disorders."[43] In an effort to prevent or minimize emotional casualties, doctors explored a range of causal factors. Some of the early thinking centered on the notion that aviators had not been "adequately educated for war" since the average airman did not hate the enemy and did not appreciate why he was fighting.[44] Psychologists believed that the desire to avoid a repeat of World War I resulted in a "peace-indoctrinated" youth that was ill-equipped to release "their lifelong repressed and sublimated aggressions," and this contrasted with their belief that the Axis

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[41] Wells, 71.
[42] Mae Mills Link and Hubert A. Coleman, *Medical Support of the Army Air Forces in World War II* (Washington, DC: Office of the Surgeon General, USAF, 1955), 847.
[43] Link & Coleman, 847.
[44] Link & Coleman, 848-49.

Powers had done the opposite with their youth.[45] Doctors also found that some airmen "did not have the psychological structure for combat," and they identified additional factors ranging from boredom to the physical and mental strain of flying to the rotational policies in place as causing problems.[46] The fields of psychiatry and psychology were relatively crude by today's standards, and quite often the attending physician was a flight surgeon rather than a board-certified psychiatrist or psychologist. Still, the lack of experience did not prevent a number of creative solutions from being initiated. These included issuing alcohol rations to aviators, instituting leave and rotation policies, and establishing rest homes in theater.

One solution initiated early in the war was *combat whiskey* (also referred to as *mission whiskey*).[47] As the name implies, whiskey was issued to combat crews upon return to the base for the purposes of calming post-mission nerves, usually in the amount of two to three ounces during the post-mission debrief.[48] There is little evidence regarding the strictly medicinal value of the alcohol, but flight surgeons believed strongly in the efficacy of their policy. In April 1943, the Thirteenth Air Force Surgeon stated, "To date the medicinal use of liquor in this area as a 'Relaxer' after combat missions has not been carried out in a general or organized fashion. However, its success when used in two ounce doses following a strike has placed it far beyond the competition of anything else."[49] Additionally, personal memoirs often cite the "inflated tales of derring-do" that followed its dispensing by the flight surgeons as a gratifying and light-hearted moment for all involved.[50] No doubt, the naval tradition of rum-rations played a part in this policy creation and the alcohol was intended to help airmen decompress, but the instigation of sanctioned alcohol consumption also coincided with cheap and plentiful opportunities to

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[45] Link & Coleman, 848-49.
[46] Link & Coleman, 849-53.
[47] The author of the Thirteenth Air Force Medical Section History for 1943 claims that the Thirteenth Air Force Surgeon's Office had initiated or been instrumental in initiating many of the Air Force policies including combat whiskey, the Flying Evaluation Board, and rest and rehabilitation policies. Headquarters Thirteenth Air Force, 'Medical Section Activities for 1943', 9 May 1944, 750.740 16 Jan 1943 – Aug 1945, AFHRA.
[48] Leroy Roberts, Jr., Oral transcripts, The Voices of WWII, n.p., on-line, Internet, 14 March 2005, available from http://www.wwiihistoryclass.com/transcripts/Roberts_L_021.pdf.
[49] Surgeon, Headquarters Thirteenth Air Force, "Report to TAS," 9 Apr 43, quoted in Mae Mills Link and Hubert A. Coleman, *Medical Support of the Army Air Forces in World War II* (Washington, DC: Office of the Surgeon General, USAF, 1955), 838.
[50] Bob Witty, "D-Day: The Memories Still Make Hearts Pound," n.p., on-line, Internet, 14 March 2005, available from http://www.b26.com/marauderman/bob_witty.htm.

continue drinking beyond the two to three ounces prescribed by the flight surgeon. As with many high-stress occupations, relief took the form of excessive drinking, and the tradition of hard-drinking pilots continues today.[51]

Another solution was to experiment with the use of leave and rest periods. In the Pacific during 1943 and early 1944, whole units would be given leave together. This was accomplished by rotating squadrons to front-line bases on a six-week basis, allowing for a period of leave followed by a period of training and rehabilitation before returning to the front.[52] The uniformity of this policy varied with the type of aircraft and, in some cases, the command, but the consensus was that leave every three months produced positive results.[53]

In Europe, medical staffs confronted many of the same issues. Stress was especially evident in the bomber crews as they experienced attrition rates of nearly 5 percent per mission early in the war. Eighth Air Force bomber crews recognized quickly that the statistics were not in their favor and despondency, flying fatigue, and combat exhaustion spread quickly.[54] Crews did not feel that they had a survivable goal to work toward. As a result, the flight surgeons urged commanders to set a definite tour length, and the initial recommendation of 25 missions for bomber crews emerged from the medical community. In the case of fighter pilots, the tour length was set at 150 missions or 200 hours of operational flying. Later, in August of 1944, commanders extended tour lengths as a result of reduced mission intensity and increased survivability.[55]

It appears that tour limits also played a crucial motivational role for individuals by helping them work towards a goal with elements of duty and service. In other words, they were able to face repeated danger by rationalizing the idea that a certain number of missions or flying hours constituted a contractual relationship with their nation and fellow airmen.[56] Once complete, they could expect to return to the United States safe in the knowledge that they had done their part to win the war.

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[51] Wells, 97.
[52] Link & Coleman, 857.
[53] Link & Coleman, 857-58.
[54] Link & Coleman, 661.
[55] Link & Coleman, 661.
[56] Samuel A. Stouffer et al., *The American Soldier: Combat and its Aftermath, Vol. II* (Princeton, NJ: Princeton University Press, 1949), 383-87.

Flight surgeons in Eighth Air Force also established rest homes away from the bases for crews to use while on leave. These were considered a significant success, and further studies inquired into the appropriate point in a combat tour for airmen to be given leave. Their findings indicated the importance of correlating the leave policy to operational intensity.[57] Interestingly, the rest homes were not an option for men who had completed their combat tours as these men were considered "free of the tension experienced by those who had more missions to make."[58] As the war progressed, other commands such as Ninth Air Force and the IX Troop Carrier Command made arrangements for airmen to take leave in Paris where one history noted, "They found the accommodations excellent and, after two or three days' indulgence in the internationally famous amusements offered in Paris, preferred the recreational facilities provided by the hotels and the Red Cross to the 'fleshpots' of the city."[59]

Unlike the medical response, commanders directly responsible for the administrative policies and actions taken had to deal with airmen who proved psychologically unfit or unwilling to fly in combat. While it is not clear when this dilemma first appeared in the war, it is clear that the issue required commanders to balance their personal beliefs about duty and courage with their professional responsibilities to the men who were really suffering; and, unlike the flight surgeons who might be described as interested observers, commanders were flying the same missions and assuming the same risks as their men.

Commanders were also forced to grapple with the validity of the claims made by some of their men. A teletype conference between Twentieth Air Force and Army Air Forces Headquarters illustrates this issue. A commander stated,

> It seems to me, and it is almost SOP [standard operating procedure], that all an individual has to do is to go to the flight surgeon and state that he is afraid to fly. He is immediately given an unsatisfactory ARMA [adaptability rating for military aviation] and is disqualified. That is the individual's out and is just exactly what he wants.
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> No commander wants these men around. In spite of the nicety of medical terms "unsatisfactory ARMA," "anxiety neurosis," or "phobia," all commanders and the

[57] Link & Coleman, 663.
[58] Link & Coleman, 663.
[59] Link & Coleman, 663-64.

> other men know and feel that the proper lay term is that the man is yellow; that he is quitting and deserting them at a time when the chips are down; and that he is running away from the enemy. He is like a cancer in their midst.[60]

Likewise, it appears that some commanders used medical disqualifications in lieu of the more difficult (and appropriate) administrative measures. According to Link and Coleman, "medical disposition was easier to accomplish and was likely to have less repercussion than administrative disposal."[61] In turn, this practice placed more pressure on the flight surgeon and had the effect of endangering his relationship with the commander in a conflict between individual medical needs and the tactical situation.[62]

In an effort to address the issue uniformly, Gen Henry H. "Hap" Arnold, the Commanding General, spelled out both the administrative and medical steps to what he called the "lack of incentive for flying and unwillingness or refusal to meet military stresses."[63] Administratively, the first stop for officers who were performing unsatisfactory flying duty was the unit flight surgeon. The flight surgeon determined if the officer was physically qualified for flying, and, if found qualified, the officer would be ordered to appear before a local Flying Evaluation Board for action.[64] The FEB consisted of a board of rated officers (pilots, navigators, or bombardiers) who examined the individual's case and flying history before making a determination about the future of the officer in question. General Arnold directed the boards to specifically consider the age, rank, and cumulative experiences of the officer, making a point to state that "it is reasonable that senior officers whose primary duties for a period of years have been other than flying, may have lost some incentive for flying."[65] Regarding young, inexperienced officers, their commission was "solely for the purpose of accomplishing flying duties," and that "[w]hen such an officer exhibits a lack of incentive for flying … consideration of

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[60] "Teletype Conference to and from Washington, June 13 to June 20, Inclusive," 760.161 June – July 1944, AFHRA. Document is now declassified.
[61] Link & Coleman, 671.
[62] Link & Coleman, 671.
[63] Commanding General, Army Air Forces, memorandum to Commanding Generals, All Air Forces in Theaters of Operations, subject: Lack of Incentive for Flying and Unwillingness or Refusal to Meet Military Stresses (AAF Ltr (C)35-18), 7 Dec 1944, 141.28G, AFHRA. Document is now declassified.
[64] An expanded discussion of the FEB and its historical roots can be found in Chapter 4. The earliest appearance of the term *FEB* is Army Air Force Regulation 35-16, *Suspension, Removal and Reassignment of Rated Flying Personnel in Flying Status,* dated 7 Jan 42.
[65] AAF Ltr (C)35-18, 2.

his elimination is indicated."[66] In either case, the rated officer was expected to state in writing his refusal to fly and if the FEB found that the officer possessed "undesirable habits or traits of character" or a "lack of fundamental courage," they immediately initiated reclassification procedures "with a view towards his separation from the service."[67]

General Arnold also addressed medical administrative issues by outlining four main considerations that medical officers were expected to use when deciding if a pilot was physically qualified for flying duty: (1) Previous psychological history; (2) Flying stress experienced; (3) Type and intensity of the emotional change; and (4) Response to rest and definitive treatment.[68] In the event of physical disqualification, Arnold directed flight surgeons to explicitly state the rationale for disqualification: "the individual is physically disqualified for flying for the following reasons: ***."[69] This direction was an apparent nod to the problem of commanders using medical disqualifications in lieu of administrative actions, but Arnold also took the time to elaborate on the financial repercussions of these disqualifications. He stated, "Physical disqualification establishes a history of an illness or the presence of a physical disability, which may or may not be incident to flying duty and which undoubtedly can be used as a substantiation for a claim for compensation if such individuals are under consideration for separation from the military service on the basis of physical incapacity for such service."[70]

While General Arnold's policy letter outlined clear procedural guidance, it was less clear when it came to recommending disciplinary action. Perhaps in a nod to the great variance in severity and circumstance, the general reserved the strongest language for clear-cut cases, stating, "in flagrant cases of refusal to fly, serious willful violations of flying regulations, and other appropriate cases, strong disciplinary action such as General Court-Martial is indicated."[71]

It is important to point out those unit flight surgeons and local FEBs made up the lower half of a two-tier system. Both a Central Flying Evaluation Board and Central

[66] AAF Ltr (C)35-18, 2.
[67] AAF Ltr (C)35-18, 3.
[68] AAF Ltr (C)35-18, 7.
[69] AAF Ltr (C)35-18, 4.
[70] AAF Ltr (C)35-18, 4.
[71] AAF Ltr (C)35-18, 3.

Medical Examining Board existed to examine cases that could not be resolved locally or that merited special consideration. As an example, "Any individual who commits an act constituting a serious, wilful [*sic*] violation of flying regulations, demonstrating a marked lack of proficiency in performance of flying duties and inherent characteristics of personality rendering him unfit for performance of useful flying duty, will be investigated by a Central Flying Evaluation Board."[72] These boards were not appeal mechanisms, however, and General Arnold made this point very clear.[73]

In the end, General Arnold minced no words when he stated "that the solution of the problem of unwillingness or refusal to meet stresses imposed by military situations is basically a function of command."[74] He exhorted commanders to make every effort to "develop a sense of moral responsibility in individual flyers and to maintain a high level of morale by frequent discussions led by experienced and mature flyers, squadron commanders, group commanders, and others who have had a considerable amount of combat experience."[75] Reports following World War II reinforced the validity of General Arnold's message with statements such as "Informal observations indicated that groups with better bombing accuracy records, lower proportion of [abortive] planes, and a smaller number of cases of anxiety reaction to combat stress were those in which the commanders and flight surgeons were superior leaders."[76]

Korea

Combat fear and stress returned as an organizational dilemma with the Korean War and, not surprisingly, the Air Force responded with many of the same tools utilized in World War II: mission whiskey, rest periods, rotation policies, and a focus on leadership. According to the history of Far East Air Forces (FEAF), *fear of flying* became a recognized problem in the command in February 1951. Prior to that month, the command processed a small number of cases of *fear of flying* and "lack of incentive," but

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[72] Army Air Force Regulation 35-16, *Flying Status, Suspension and Removal of Suspension from Flying, Restriction on Flying, and Evaluation of Flying Personnel,* dated 20 Oct 44, 12.
[73] AAF Ltr (C)35-18, 2.
[74] AAF Ltr (C)35-18, 4.
[75] AAF Ltr (C)35-18, 4.
[76] John C. Flanagan, ed., *The Aviation Psychology Program in the Army Air Forces, Report No. 1,* Army Air Forces Aviation Psychology Program Research Reports (Washington, DC: U.S. Government Printing office, 1948), 208.

the numbers increased with the steady arrival of replacement crews until the number of cases reached a peak in July 1951.[77] Some indication of the scope of the problem comes from a press conference where the Air Force reported that between July 1950 and 29 February 1952 there were a total of 979 cases involving voluntary requests for relief from flying, fear of flying, lack of incentive, resignations, and suspensions resulting from lack of motivation.[78] This figure did not represent the total number of men relieved from flying, as it did not include men relieved for physical reasons or as a result of serious accidents.[79]

Throughout 1950 and into early 1951, most of the combat flying had been handled by experienced pilots. As the war progressed into 1951, however, reservists who had been trained at the end of World War II and subsequently demobilized back into civilian life returned to the cockpit. As reservists, they had received little to no training in the ensuing years and they found themselves involuntarily recalled to flying duty after the start of the war in Korea. In addition, many men expressed concern about the age of the aircraft they were flying in combat. Fifth Air Force, with the highest proportion of older F-51 and B-26 units, had the majority of the *fear of flying* cases—a fact that changed with the adoption of newer equipment.[80]

One of the primary reasons these reservists were returned to active flying was the establishment of a rotation policy by FEAF in 1951 that allowed wing commanders to rotate fighter pilots after a minimum of 100 combat missions and light bomber crews after a minimum of 50 combat missions.[81] Ironically, the policy designed to deal fairly with seasoned combat pilots (as well as reduce the number of psychological casualties) instigated the increase in *fear of flying* cases among men who believed that their days of combat flying were behind them. FEAF Bomber Command employed an interesting twist on the rotation policy later in the war by authorizing wing commanders to vary the

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[77] Unfortunately, the FEAF history does not include the number of cases or percentage increase from one period to another. *FEAF Report on Korea, Book 3 of 3 (Draft)*, Appendix 23, pgs 18-27, K720.04D 25 Jun 50 – 27 Jul 53, AFHRA. Document is now declassified.
[78] *History of the Office of the Secretary of the Air Force (SECAF),* 1 Jan 52 – 30 Jun 52, K168.101-6, AFHRA, 217.
[79] *History of the Office of the SECAF*, 217.
[80] *FEAF Report on Korea*, 24-27.
[81] *United States Air Force Operations in the Korean Conflict, 1 July 1952 -27 July 1953*, USAF Historical Study no. 127 (Maxwell AFB, AL: USAF Historical Division, Research Studies Institute, Air University, 1956), 161-2. Document is now declassified.

number of months in combat based on performance. Meritorious crews could rotate out of the theater after five months while under-performing crews stayed for a maximum of seven months.[82] It is not clear what effect, if any, this policy had on psychological casualties.

Despite waiting until 1951 to establish a rotation policy, FEAF acted quickly to establish a "rest and recreation" policy that allowed men three days off in Japan for every six weeks in Korea.[83] This policy followed Fifth Air Force's move from Japan to Korea in October 1950 and the program expanded in conjunction with the Eighth Army in 1951 to allow groups of men (not just pilots) time off in Japan. By the end of the war, 800,000 passengers had been airlifted between Korea and Japan through this program.[84] While it can be inferred that this rest policy had a positive impact on the force as a whole, there is nothing to indicate that the policy was designed to meet the specific needs of pilots. One psychiatrist writing a review of Air Force combat psychiatry noted "that fliers do not necessarily rest on R and R. It is wise not to schedule them to fly for 1 day after they return from R and R."[85]

With the return of *fear of flying* cases came confusion about and misapplication of policies designed to deal with the affected men. One area of concern that was also experienced in World War II was the medical disqualification process. Much as in the previous war, senior commanders in Korea believed that flight surgeons were not adequately observing rated officers who professed a fear of flying before making a "definite determination of their physical or psychological incapacitation for flying duty."[86] While not explicitly stated, the concern was that flight surgeons were letting men off too easily.

The second area of concern during this period was the way that airmen professing a fear of flying tried to get suspended from flying duties. Air Force Regulation (AFR)

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[82] Robert F. Futrell, *The United States Air Force in Korea: 1950-1953* (Washington, DC: Office of Air Force History, 1983), 634.
[83] Futrell, 182.
[84] Futrell, 558-59.
[85] David R. Jones, M.D., "U.S. Air Force Combat Psychiatry," in *War Psychiatry* (Washington, DC: Office of the Surgeon General, 1995), 187.
[86] Message, Hq SAC DPRS 210.4, subject: Suspension from Flying Status, Commanding General, Fourteenth Air Division, to subordinate commanders, 18 April 1952, K-DIV-14-HI Exhibit J Apr 1952, AFHRA. Document is now declassified.

35-16 directed commanders to suspend and order an FEB if a flyer exhibited a fear of flying, if they showed a fear of flying certain types of aircraft, or if they simply demonstrated a lack of incentive for flying.[87] This authority was originally provided to the base or unit level commander, but in November 1951 the regulation was amended so that persons requesting permanent suspension were required to submit a letter through official channels to Headquarters USAF.[88] The differentiation was now made between men who volunteered to quit and men who were observed by commanders to have a problem with fear or lack of incentive, and this differentiation helped deal with the individuals who figured out that the quickest way to get out of Korea and back to the United States involved a "voluntary request to be removed from flying status for lack of desire to continue flying."[89] Another administrative deterrent involved retaining these "quitters" in Korea for the duration of a normal 12-month tour before returning them to the United States for separation.[90]

This subtle differentiation resulted in administrative confusion—local commanders improperly suspended men who had requested suspension rather than keeping them in combat positions while headquarters considered their request—and prompted policy guidance from the Air Force Chief of Staff, Gen Hoyt S. Vandenberg, akin to the earlier letter from General Arnold. In his policy letter, Vandenberg repeated many of the same points that Arnold had made with specific mention of the "contagious aspect" of the requests to be suspended from flying. Vandenberg wrote, "I want to remind you that there may be a contagious aspect to many of these requests to be suspended from flying, and urge you to move these individuals promptly before the contagion spreads throughout any unit or base in your command."[91] According to the letter, this contagion demanded that commanders promptly remove such men, but General Vandenberg also reinforced the role of "strong and understanding leadership" in

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[87] Air Force Regulation 35-16, *Military Personnel: Flying Status of Rated Personnel*, 10 Feb 1950, Para. 9a(3).
[88] Air Force Regulation 35-16A, *Military Personnel: Flying Status of Rated Personnel*, 19 Nov 1951, Para. 9a(6).
[89] *FEAF Report on Korea*, 24-25.
[90] *FEAF Report on Korea*, 25.
[91] Quoted in message, Headquarters Fifth Air Force (PR 210.49), subject: Incapacitating Fear of Flying, Brigadier General E.K. Warburton, to multiple recipients, 4 May 1952, Fifth Air Force History, Appendix 99, K-730.01 Jan – Jun 1952, AFHRA.

"quickly clearing up the 'Fear of Flying' problem now before us and keep[ing] it in hand for the future."[92]

The policy letter adhered to many of the same procedures established by General Arnold in 1944—first establish the validity of the claim, then treat or punish based on the diagnosis—although the language was more direct. According to Vandenberg, "Efforts on the part of an individual, declared professionally and physically qualified, to avoid hazardous duty, and in particular training for, and actual combat, indicates he has failed to live up to the standards of an Air Force officer and he should be separated from the service."[93] Another carryover from Arnold's policy letter was a discussion about the financial implications of declaring a pilot "emotionally sick." Apparently, the concern was that an individual could claim "emotional sickness" and walk away with a pension for life. Vandenberg stated, "He [the emotionally sick individual], therefore, will be suspended from flying but will be assigned ground duties. This appears to be the quickest way to cure his neurosis. When he no longer has his neurosis and can therefore be separated administratively, he will be frozen in grade and will not be promoted during his recovery. You will note that no mention is made in the policy of resignations. They will not be accepted."[94] Such stark language from General Vandenberg appears to reflect the demands of running a large, complex organization rather than dealing with actual emotional or psychiatric casualties on an individual basis.

Vietnam

In a predictable way, the Air Force was once again forced to deal with acute combat fear and stress in Vietnam. As with World War II and Korea, the Air Force attempted to spread the risks of flying in combat across the fighter force by limiting tours to 12 months or 100 missions in North Vietnam, whichever came first.[95] This translated into typical tour lengths of seven or eight months, and the Air Force employed a "one tour" policy that avoided involuntary repeat tours until later in the war.[96]

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[92] PR 210.49.
[93] PR 210.49.
[94] PR 210.49.
[95] Wayne Thompson, *To Hanoi and Back: The U.S. Air Force and North Vietnam, 1966-1973* (Washington, DC: Smithsonian Institution Press, 2000), 10.
[96] Thompson, 10-11.

At the same time, administrative confusion about how to handle *fear of flying* cases returned. One of the earliest indications of this confusion is a 1966 message inquiring about the "policy on aircrew fear of combat flying cases."[97] Specifically, the message asks, "Should an officer who has completed 75 of 100 combat missions and expressed a fear of flying more combat receive the same disposition as a newly reported officer who had not flown a combat [mission?] Under current directive both of these cases would receive the same processing." The same issue of classification and differentiation required guidance from higher headquarters, but the regulations had not changed to incorporate the circumstances surrounding combat—a situation that remains today.

One of the most interesting aspects of research on this period is the shortage of historical and statistical data about the subject. Colonel David Jones, a retired USAF psychiatrist who has written extensively on the subject, points out that "there is essentially no psychiatric literature on the U.S. Air Force experience in Southeast Asia during the Vietnam conflict."[98] There are no policy letters and only a few messages and medical studies to review. Official histories, where available, do not mention the subject, but other sources generally support the idea that acute combat fear and stress existed in the USAF fighter units. An example of the limited material is a report from a conference of Vietnam-era flight surgeons which states, "The lessons learned in SEA [South East Asia] were no different than in other wars. There will always be a certain number of airmen who will develop fear of flying either due to fear of injury, deaths, capture, or a real phobia."[99] Unfortunately, the research did not yield any statistical data, and so the ensuing discussion relies on specific cases and anecdotal evidence from personal memoirs.

What emerges is a picture of commanders as the key component of the Air Force's organizational response, and when these "certain airmen" did surface, their commander's response appears to have been guided by instinct more than procedure. A

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[97] Message, AF IN: ??(garbled)265 (5 Sep 66), subject: Policy on Aircrew Fear of Combat Flying Cases, unknown (garbled/distorted) sender and recipient, K143.5072-40 Mar 65 – Oct 66, AFHRA. Document is now declassified.

[98] He also states that little was written during the Korean War and that nothing significant has emerged from USAF operations since 1986: Libya, Grenada, Panama, or Iraq. Jones, 179.

[99] "Aeromedical Readiness: The Lessons of Vietnam" n.p., on-line, Internet, 20 March 2005, available from http://www.brooks.af.mil/web/af/courses/amp/cluebag/viet_nam_lessons_learned.txt.

typical episode is documented in message traffic from 1966. The commander of the 355th Tactical Fighter Wing at Takhli Air Base, Thailand reported two cases of "incapacitating fear of flying"—both F-105 pilots with more than 2,000 hours of total flying time.[100] In the first case, the pilot apparently expressed his fear of flying in combat to his squadron commander who counseled the pilot and subsequently scheduled him for a relatively easy mission. Despite the squadron commander's assessment that the pilot's flying ability was suitable, the pilot stated that he could not continue. The second pilot expressed his fear to the flight surgeon, who reported the information to the squadron commander. The squadron commander suggested some time off and instructed the schedulers to leave him off the schedule for a few days. A couple of days later, the pilot again reported that he "just couldn't make it" and the squadron commander once again suggested time off. To no avail, the pilot was removed, and the wing commander concluded that an administrative discharge was in order for both pilots because the actual condition was not fear of flying but fear of flying combat. As the message put it, "There is no indication that such a fear ever presented itself over the years and thousands of flying [hours] each has accumulated."[101]

Ironically, the message cited above also sought guidance on the recurring administrative problem of classification. Regulations still used *fear of flying* as a "catch-all" phrase without differentiating between combat and non-combat situations. In this case, the wing commander stated, "It is our interpretation that if it is determined that trial by court martial is inappropriate AFM 35-13 and AFR 36-2 should be followed and that in such cases Air Force policy does not differentiate between the administrative handling and disposition of cases where fear of flying per se is involved as opposed to cases involving a fear of flying combat…. Do you concur? Please [advise] soonest"[102]

An oral history interview provides another example of a commander's personal approach to an officer who wanted to quit. In this case, the officer said that he could not

[100] Message, AF IN: 15461 (10 Sep 66), subject: Policy on Aircrew Fear of Combat Flying Cases, unknown (garbled/distorted) sender and recipient, K143.5072-40 Mar 65 – Oct 66, AFHRA. Document is now declassified.
[101] Message, AF IN: 15461 (10 Sep 66), 3.
[102] Message, AF IN: 15461 (10 Sep 66), 4-5.

go into "6-Alpha" any more.[103] The commander replied, "Before you sit down and tell me that, go back outside, sit down and have a cup of coffee, think about it, because if you come in and tell me that again, I'm going to have you court-martialed. By fate you are a F-105 pilot, and nobody wants to go to 6-Alpha. Nobody wants to go there, but if I let you get away with it, I can't look the rest of these guys in the eye. You are going to 6-Alpha or you are going to be court-martialed [with] dereliction of duty."[104] In this case, the pilot was hospitalized and worked with a priest for about three weeks before successfully returning to fly the remainder of his missions. Neither of these commanders makes reference to a common set of procedures or actions to help these struggling pilots. Instead, what emerges is an ad hoc mixture of professional and religious counseling, directed rest, medical attention, and the coercive threat of a court-martial.

Personal memoirs by fighter pilots are useful sources of information on this subject, but they differ from primary documents and histories in an important way by demonstrating the emotional aspect of dealing with the problem. An example of this is found in Brig Gen Ken Bell's account of his time flying F-105's in Vietnam. Prior to his departure for SEA, a young classmate in F-105 training came to him expressing his fear of flying in combat. As Bell writes, "[The lieutenant] had the guts to share his problem but I couldn't seem to find the word to encourage him. I was as frustrated as he was scared. I felt terribly inadequate but I was on the spot to do something."[105] Bell tried to reassure the young officer and suggested that he speak to the squadron commander. Later, upon arriving in SEA, Bell was troubled to learn that the pilot had been killed in an accident.

Another memoir, *Going Downtown*, recounts the time a pilot in the author's wing "quit when he got shot at a few times." According to the author, Jack Broughton, who was the vice wing commander, "He told me he was afraid…. For a few days I was so engrossed in trying to punish that individual that I didn't pay the proper attention to all

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[103] For deconfliction and planning purposes, North Vietnam was divided into "route packs." In this case, "6-Alpha" refers to an area north of Hanoi that was considered particularly dangerous because of enemy defenses and the fact that search and rescue efforts could not be staged in the event of a shoot down or aircraft malfunction.
[104] Oral History Interview, Maj Gen William C. Norris, 29-30 November 1984, K239-0512-1618, AFHRA.
[105] Kenneth H. Bell, *100 Missions North* (Washington, DC: Brassey's [US], 1993), 15-16.

my charges who were laying it on the line."[106] Broughton very much wanted to ensure that the officer was unable to fly again or wear his wings but, according to his account, "The regulations were specifically designed to prevent that."[107] A review of the regulations at the time contradicts this assessment.[108] Broughton may have perceived the administrative burden associated with a Flying Evaluation Board (the only procedural way to remove someone's wings) as an unpalatable course of action, but the regulations provided a means to permanently remove a pilot from flight status, restrict the wearing of aviation badges (such as pilot wings), and even discharge an officer for failing to maintain professional standards.

When examined together, these accounts demonstrate not only the personal revulsion of commanders about reactions to combat fear and stress but also the various approaches to dealing with what appears to be the exception rather than the rule. Another point that emerges from these accounts is the general unwillingness of men to specifically name the affected pilots. None of the memoirs and only one of the messages states a pilot's name. This is done either out of respect for the ill (assuming psychiatric illness) or it demonstrates an element of restraint that could be considered appropriate when telling stories from the past. In either case, it has the effect of blurring the historical record. The affected pilots are nameless, and, thus, they become faceless as well. They are allowed to slip away, and the consciousness of the Air Force goes on without any specific assault on its warrior ethos.

Conclusion

The historical record demonstrates that the Air Force's organizational response has included medical, administrative, and personal elements. Documents suggest a more robust dialogue between commanders and flight surgeons during World War II, but the lack of documentation from later wars does not necessarily suggest a break-down in that

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[106] Jack Broughton, *Going Downtown: The War Against Hanoi and Washington* (New York: Orion Books, 1988), 131.
[107] Broughton, 131.
[108] The applicable regulation during Colonel Broughton's time in Southeast Asia was AFM 35-13, *Flying Status, Aeronautical Ratings, Designations, and Parachute Jump Status,* 10 September 1962 (amended through Change G, 10 March 1966), Para. 2-18. Despite changes in regulation numbers and titles, the substance of the regulation remains virtually unchanged since World War II. See Appendix C for a historical listing of the FEB regulations.

dialogue or relationship. In fact, the major policy letters that emerge from World War II and Korea demonstrate how the administrative and medical responses were addressed in a parallel manner—the same letter was used to communicate to commanders and physicians. Any inherent tension between the two groups (as evidenced by competing language) appears to be a natural by-product of their different foci.

Flight surgeons played an important role in defining, describing, and treating *fear of flying*. Their efforts attending to airmen and advising commanders resulted in important policies on leave and combat tour limits, even if the concept of *mission whiskey* seems woefully antiquated by today's standards. Administratively, the struggle centered on how the existing policies were refined and applied. Some confusion was self-induced by poorly communicated procedures, but much of that confusion had to do with the broad terminology found in the regulations.

In the end, commanders emerge as the face of the Air Force's organizational response. World War II and Korea offer examples of senior leader impact—the policy letters—and Vietnam illustrates the role of squadron and wing commanders as the "first line of (organizational) defense." To an organization that is focused on war fighting and worried about the contagious nature of fear, the commander intuitively fulfills this role, but to the individual who feels overcome by combat stress, the commander is often the first to hear his plea for help. The commanders highlighted in this chapter were exhorted to use leadership and compassion to balance the competing interests. Most of the pilots overcame or managed their fear themselves, but for those who could not—either temporarily or permanently—their commander was the intervening step before administrative action. The commander's role and choice of actions (as well as the consequences of those actions) is a theme that is continued in the next chapter.

Chapter 3

Contemporary Thinking and Policy

Men do not like to fail conspicuously, and any failure in flying is a conspicuous one.

- Douglas D. Bond, M.D.

Despite its long history, the subject of acute combat fear and stress in the Air Force has settled into the background, and this is not without cause. Aviators, commanders, and health professionals all acknowledge the subject when asked, and a wide variety of personal and community responses can be elicited. Together, the answers form the Air Force's contemporary organizational response, and the different perspectives will be explored in order to explain why and how the Air Force ignores combat fear and stress.

Fighter Pilots

For fighter pilots, the subject of acute combat fear and stress is akin to folklore—stories from a time long ago with a questionable factual basis. Debilitating fear is not something that happens to them or their peers. This perspective on acute combat fear and stress can be attributed to both the psychological makeup of these individuals and the cultural cues within their community. It is important to note that there is a clear delineation between fear, which most aviators will acknowledge occurs in combat, and acute episodes leading to mission degradation or failure. The former is an accepted reality (if not a common subject of discussion), while the latter is much more taboo.

Any attempt to describe the personality and character of fighter pilots can easily fall into the realm of cliché. Self-assured to the point of arrogance, competitive to a fault, aggressive, macho, and rude are all terms that fit the stereotype. One psychiatrist writes, "Such a [tactical fighter] pilot must have supreme confidence in personal skills and a strong narcissistic component. It displays itself in the 'typical fighter pilot personality'

that is immediately apparent to the most casual observer of human nature."[109] However, stereotypes often fall short of telling the whole story. In reality, these individuals have a number of strengths and weaknesses that help them in the performance of their duties. According to Dr. John Patterson, Chief of Aerospace Clinical Psychology at the USAF School of Aerospace Medicine, pilots are likely to score in the 95th percentile of almost any test they are given, but in general they are not very psychologically sophisticated.[110] He describes a poor introspective ability which results in a lack of awareness and understanding of the forces that are acting on their psyche. In short, they would rather *do* than *think*.

In addition to internal factors like personality traits, external factors such as cultural forces and cues are also at work. Cultural forces and cues exist in every society and profession. They guide behavior, structure responses, and serve as informal means of acceptance and communication. The fighter community is replete with examples of these cultural forces and cues. Certain words and phrases are conspicuously avoided, flight suits and hats are worn in a particular way, and acceptance of criticism during the debrief despite rank all serve to establish accepted behaviors and norms.[111] Given the highly cohesive characteristics of fighter squadrons, these cues are further reinforced through social interaction. A significant by-product of this group dynamic is found in the typical fighter pilot personality. In consonance with the aforementioned stereotype (and reinforced by combat history) is the importance of aggressiveness and invincibility. Young pilots are taught that the meek will not inherit the earth and that aerial combat is no place for men and women who lack the skill or stomach to kill. In this environment, the topic of acute combat fear and stress is not readily accepted as a topic of discussion.

The idea that a fighter pilot could be incapacitated or unable to perform as a result of fear is anathema to the cultural expectation of invincibility. This is not to be confused with infallibility, and men and women who fly in combat are keenly aware of the inherent risks of combat. Still, the common (if not normal) response to such danger is to deflect it

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[109] Jones, 181.
[110] John C. Patterson, Ph.D., USAF School of Aerospace Medicine, Brooks AFB, TX, interviewed by author, 22 December 2004.
[111] A debrief occurs after every flight. Pilots review the planning and conduct of the mission in order to improve their performance and tactics. The accepted custom is that any member of the flight, regardless of rank or experience, can discuss another flight member's performance without automatically deferring to a more senior officer.

by stating and believing that it will happen to "some other poor bastard." If a commander briefed a room full of pilots that he expected 50 percent of them to be casualties, the entire room would comfortably look around to see which of the other pilots would make up that 50 percent. This response has a clinical basis in the personality traits of fighter pilots and a practical necessity in facing the crucible of combat, but, ironically, this same feeling of invulnerability has negative connotations in the realm of civil aviation. In that realm, "pilots who think this way are more likely to take chances and run unwise risks, thinking all the time, 'It won't happen to me!'"[112]

Another cultural cue is the heavy emphasis on leadership in the air and on the ground. Fighter pilots are constantly judging themselves and their peers on a variety of things: aviation ability, situational awareness, and flight leadership to name a few. It follows that a pilot's willingness to broach a subject fraught with human frailty and poorly understood causal mechanisms might be alarming to subordinates and peers. Physiological issues such as operating in a high-G environment or dealing with a lack of oxygen can be satisfactorily understood and combated with proper training and techniques.[113] There is a sense that certain tests can even predict an individual's susceptibility to these physiological risks. In Air Education and Training Command (AETC), the Fighter Aircrew Conditioning Test (FACT) is an instrument that uses a pilot's physical strength as an indicator of their susceptibility to G-induced Loss of Consciousness (GLOC). Conversely, psychological issues are perceived as being more difficult to anticipate, explain, or combat. If a FACT equivalent for combat stress exists, it is not being administered in a routine manner. Apart from peer or subordinate considerations, a discussion of psychological issues also suggests a need for introspection that pilots in general lack.

Commanders

Commanders juggle a multitude of responsibilities. In the world of combat aviation, these can be distilled into two core tasks: delivering combat capability and

[112] Lewis F. Lester and Deborah H. Bombaci, "The Relationship Between Personality and Irrational Judgment in Civil Pilots," *Human Factors*, vol. 26, 568.
[113] *High-G* refers to the acceleration felt by a pilot or WSO in a tightly-turning aircraft. Pilots of modern fighters routinely experience 6-9 G's—or six to nine times the force of gravity.

taking care of their people. There is, however, a paradoxical relationship between the two tasks because of the fact that men and women are injured and killed in combat. Performing the mission often means that subordinates will pay with their lives, and acute combat fear and stress can affect commanders in some more or less obvious ways—ranging from task failure to the emotional cost of asking a select few members of the squadron to perform dangerous missions that their peers are unable or unwilling to accept.

Despite this, the subject is not a normal topic of discussion for commanders, and this does not appear to vary with the level of command. For example, consider the experience of a senior Air Force leader, Lt Gen Michael Short, the Combined Force Air Component Commander (CFACC) during Operation Allied Force in 1999. He stated that at the end of the 78-day campaign he had only begun to consider the effects of sustained combat on the pilots under his command.[114] He had not identified units or engaged in discussions with senior Air Force leaders about the need to rotate or replace the pilots, but he was aware that certain squadrons (A-10s specifically) were constantly operating in high-threat environments. Interestingly, Lieutenant General Short stated that this was the first time he had really thought about the issue—despite a variety of command experiences.

Such anecdotal evidence is illuminating but not compelling. Another example of the paucity of discussion is found at the squadron commander level and an examination of the training that prospective commanders receive before assuming command. This training is conducted at the major command level—Air Combat Command (ACC), Pacific Air Forces (PACAF), and United States Air Forces in Europe (USAFE).

Air Combat Command conducts a Squadron Commanders and Spouses' Course approximately six times a year to provide prospective squadron commanders the tools to successfully command a squadron.[115] This training is mandatory for first-time squadron commanders and it covers a wide variety of personnel and policy issues. A review of briefings provided by the ACC Surgeon General reveals that the subject of acute combat

[114] Lt Gen Michael C. Short, interview by author, 6 January 2005.
[115] "2005 Squadron Commanders and Spouses' Course Schedule," n.p., on-line, Internet, 21 January 2005, available from https://wwwmil.acc.af.mil/dp/DPA/DPAD_SQCC_Course_schedule.htm.

fear and stress is not covered.[116] Further correspondence with the office responsible for this training also confirms that the issue is not a part of the curriculum; this is also true for both PACAF and USAFE.[117] In defense of the training programs, it is important to note that this relatively short indoctrination is designed to meet the needs of commanders of all types of squadrons—not just fighter squadrons.[118]

Even with the right training and a thoughtful dialogue there exists a host of issues that commanders are forced to confront. Without being prescriptive, it is useful to examine the effects that acute combat fear and stress can have on a squadron.

A squadron commander has a set number of aircraft and pilots to perform his mission. Pilots who are unable to perform because of acute combat fear and stress are an obvious problem, and commanders have a task-oriented desire to either avoid the dilemma altogether or to cope with it in an expeditious manner that restores their mission capability. In addition, commanders do not want to see their people suffer. For the affected pilot, there are both medical and career ramifications associated with an episode of acute combat fear and stress. Any effort to mitigate the repercussions to one individual represents time and energy that the commander could use for other duties.

In a less obvious way, any such episode can have cascading effects throughout the rest of the unit. First, there is the potential for the problem to spread beyond an isolated individual. Essentially, this is the idea that one case in a close-knit squadron can result in a hyper-awareness of the subject that puts a dent in the perceived invincibility and defense mechanisms of other individuals. Despite the dubious nature of the hypothesis that fear is contagious, the previous chapter demonstrates that it is a recurring concern of commanders throughout the chain of command.[119] As such, this type of scenario challenges the way a commander acknowledges and copes with what has already been

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[116] "Command Medicine: A Healthy Force – The Squadron Commander's Role," on-line, Internet, 21 January 2005, available from https://wwwmil.acc.af.mil/dp/DPA/DPAD_SQCC_Course.htm.

[117] Capt Mark Horner, ACC/DPAD, e-mail message to author, 21 January 2005; Lt Col Sam H. Montgomery, PACAF/DPCX, e-mail message to author, 21 January 2005; and Lt Col David Arreola, USAFE/SGOH, e-mail message to author, 12 February 2005.

[118] In addition to the Surgeon General briefings, more than 40 other briefings covering a wide-ranging list of topics comprise this 8-day course. For more information on the ACC Squadron Commanders' Course, see the ACC Directorate of Personnel website at https://wwwmil.acc.af.mil/dp/DPA/DPAD_SQCC_ Course.htm.

[119] For a brief discussion refuting the epidemic qualities of fear during World War II, see Douglas D. Bond, M.D., *The Love and Fear of Flying* (New York: International Universities Press, Inc., 1952) 164-5; and for Korea, see *FEAF History, Vol. I*, pg 221, K720.01 Jan - Jun 52, AFHRA. Document is now declassified.

established as a taboo subject. Their choice to confront the issue with the unit as a whole and the legal constraints of privacy and medical disclosure rules can dramatically shape the attitudes of the other pilots.

It is also worth remembering that, even as these events occur, the war continues and the demands being placed on the unit are not likely to diminish. Tough missions will still have to be flown, albeit with fewer pilots, and this can be problematic when a small group is asked to shoulder a disproportionate burden in the form of high threat missions both during and after the period that these pilots are off the schedule. This point was made clear in an interview with an F-117 pilot describing his experiences in Operation Desert Storm.[120] He stated that a few pilots on the first night of the war were unable to maintain mission parameters (altitude, airspeed, timing, etc.) to the point that they were forced to abort their mission and return to base. After reviewing the mission tapes, the squadron commander apparently believed that fear and stress had caused these experienced pilots to fail and they were subsequently taken off the schedule for the next couple of weeks. As the war progressed and casualties failed to materialize (in the F-117), these pilots were put back on the schedule. They were given more benign target sets, and no formal actions against the pilots resulted from this episode. Meanwhile, the remaining pilots continued to fly the high threat missions.

This response is well within the latitude of a commander and the few pilots involved appear to have been restored. However, the potentially negative consequence of this mission threat imbalance is not to be taken lightly. Research indicates that "unit cohesion is indeed strongly predictive of military performance and directly linked to the number of combat stress casualties."[121] It follows that a squadron where pilots perceive their peers as incapable of flying dangerous missions is not very cohesive, and this lack of cohesion can subsequently lead to more stress-related problems. For the squadron commander, the challenge is to balance overall mission accomplishment with individual welfare and fairness.

Health Professionals

[120] Lt Col Dale Zelko, interviewed by author, 5 January 2005.
[121] Alan Stokes and Kirsten Kite, *Flight Stress: Stress, Fatigue, and Performance in Aviation* (Brookfield, VT: Ashgate Publishing Company, 1994), 219-220.

The term *acute combat fear and stress* is designed to encompass a variety of more specific clinical diagnoses. While this is not a clinical analysis, an understanding of how health professionals respond to this subject requires a brief overview of the precise language and resources used by flight surgeons, psychologists, and psychiatrists.

The main diagnostic reference for mental health professionals in the United States is the *Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition*— otherwise known as *DSM-IV*.[122] As the title suggests, this text provides diagnostic criteria for the most common mental disorders including: description, diagnosis, treatment, and research findings.[123] The USAF School of Aerospace Medicine has developed a "tool kit" for flight surgeons, the *Aerospace Medicine Waiver Guide,* to distill pertinent portions of the DSM-IV into a readily accessible resource.[124]

This online guide contains a section entitled "Anxiety Disorders" that specifically addresses topics applicable to aviators. According to the *Waiver Guide*, "The anxiety disorders are generally characterized by fear/apprehension, obsessions, fear of loss of control, and psychological symptoms severe enough to interfere with social or occupational functioning."[125] It goes on to describe three terms that relate specifically to anxiety and flying: manifestations of apprehension (MOA), fear of flying (FOF), and phobic fear of flying (Specific Phobia in DSM-IV).[126] Interestingly, MOA and FOF are defined by the same symptoms of fear "based on uneasiness, lack of motivation, feelings of inadequacy, rational decision, life circumstance, etc.," but MOA is used with student aviators and FOF is applied to rated aviators.[127] The fact that a person has wings would appear to be of little clinical consequence, but it may be that this delineation in diagnosis serves an administrative function that will be seen later in the discussion of the FEB.

Beyond the terminology and the resource guide, however, there appears to be little that the Air Force is presently doing to confront or manage the subject. In fact, Dr.

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[122] *Diagnostic and Statistical Manual of Mental Disorders – DSM-IV* (Washington, DC: American Psychiatric Association, 1994).
[123] http://www.psychologynet.org/dsm.html
[124] Also known simply as the *Waiver Guide.*
[125] United States Air Force USAFSAM-FEC Clinical Services Division, *Aerospace Medicine Waiver Guide,* n.p., on-line, Internet, 29 December 2004, available from http://wwwsam.brooks.af.mil/.
[126] *Aerospace Medicine Waiver Guide.*
[127] *Aerospace Medicine Waiver Guide.* The guide also states, "Phobic fear of flying is a true phobia, often involving only flying, though the symptoms can spread to other areas of life if not treated."

Patterson of the USAF School of Aerospace Medicine believes that the Air Force has assumed an "ostrich stance" on the issue—it does not know of any problems and it does not want to know if any problems exist.[128] In all fairness, this is entirely plausible for a number of reasons. First, aviators are notorious for avoiding flight surgeons and would disavow the very existence of mental health professionals if given the opportunity. Both occupations (flight surgeons and mental health professionals) represent a threat to a pilot's flying status. Dr. Patterson cited numerous visits to flying squadrons throughout his career where his presence was greeted by pilots with muted hostility.[129] As a result, there can be little expectation of pilots self-reporting or admitting to mental health issues. A silent patient population will yield few direct indicators of problems.

Second, there are significant differences in the combat experiences of the Air Force and its pilots between the historical examples discussed in the previous chapter and the more contemporary conflicts since Operation Desert Storm. The number of aircraft lost and the associated fatalities has dropped precipitously. Over the course of 12 years in Vietnam, 2,257 USAF aircraft and 2,717 airmen were killed or listed as missing, but since 1991 only 16 USAF aircraft have been shot down in combat.[130] It follows naturally that despite the continued risk of flying in combat, the actual environment is far less distressing. It is unclear if the Air Force's response (or lack thereof) is attributable to this perception of modern combat experiences, but it seems plausible.

Finally, it could be argued the Air Force already has a long-standing and effective organizational response to fear of flying—the Flying Evaluation Board (FEB).

The Flying Evaluation Board

The Air Force uses the FEB as a formal response to a variety of issues associated with its rated officers. These include a lack of proficiency, a failure to meet training standards, a lack of judgment, and an intentional violation of aviation instructions or procedures. The governing instruction, Air Force Instruction (AFI) 11-402, states that

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[128] John C. Patterson, Ph.D., USAF School of Aerospace Medicine, Brooks AFB, TX, interviewed by author, 22 December 2004.
[129] Patterson interview.
[130] Robert F. Dorr. *Air War South Vietnam* (London: Arms and Armour Press, 1990), 146; *Gulf War Air Power Survey, Vol. V: A Statistical Compendium and Chronology* (Washington, DC: Government Printing Office, 1993), 641. Fourteen USAF aircraft (out of a total of 38 coalition aircraft) were shot down in Operation Desert Storm and two USAF aircraft were downed during Operation Allied Force.

"rated officers have a responsibility to maintain professional officer standards."[131] The AFI also elaborates, "Any moral or ethical compunction, or personal or self-imposed reservation or qualification that limits worldwide availability renders an officer incompatible with career aviation status. This includes attempts to limit flying duty to specific aircraft, roles, or missions."[132]

The FEB process is, by Air Force instruction, a non-judicial, non-adversarial process, and it traces its roots back at least as far as the Army Air Forces in World War II.[133] The FEB has remained basically unchanged since that time. It consists of a board of rated officers convened to "review and discuss, in a fair and impartial manner, all information relevant to an officer's rated and professional qualifications."[134] Normally a wing commander convenes an FEB, but the major command (MAJCOM) commander and the Chief of Staff of the Air Force (CSAF) also have the authority to do so. A typical board consists of three voting members, a nonvoting recorder, a nonvoting legal adviser from the Judge Advocate General (JAG) Corps, and a nonvoting flight surgeon. All voting members must be active aviators and senior in rank to the respondent—the individual whose performance is being reviewed. Historically, the board has included as many as seven voting members, but three voting members constitute a quorum.

Once convened, the nonvoting recorder presents the FEB with the evidence gathered. The recorder plays a crucial role as the investigator and presenter of evidence. In this role, the recorder performs functions similar to those of prosecutor, but because of the non-adversarial and non-judicial nature of the FEB, this language is not used. The respondent, on the other hand, is afforded the opportunity to retain legal counsel, and this counsel is allowed to attend the otherwise closed administrative proceeding. After receiving evidence and testimony, the voting members of the board meet to determine

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[131] Air Force Instruction (AFI) 11-402, *Aviation and Parachutist Service, Aeronautical Ratings and Badges*, 29 Jul 2003, Para. 3.3.3.
[132] AFI 11-402, Para. 3.3.4.
[133] Air University Library contains archived instructions and regulations. The FEB process can be tracked from present to past through the following publications: AFI 11-402 (multiple dates), AFR 60-13 (multiple changes and dates), AFR 35-13 (multiple dates), and AFM 35-13 (multiple dates with multiple changes to the earliest record dated 3 Jun 1957). A reference is made to an earlier version of AFM 35-13 dated 10 Feb 1950, but this document is not in the AUL collection. Cross-references to personnel regulations associated with the FEB process indicate the term was in use during World War II (see Army Air Force Regulation 35-16, *Suspension, Removal and Reassignment of Rated Flying Personnel in Flying Status,* dated 7 Jan 1942).
[134] AFI 11-402, Para. 4.4.1.

only "the respondent's qualification for aviation service, i.e., remain qualified or be disqualified."[135] This narrow charter excludes consideration of issues such as follow-on assignments, but it can include recommendations about placement in different airframes (multi-placed vs. single-seat aircraft) and the continued wear of aviation badges (pilot or navigator wings). After being reviewed by the staff judge advocate for legal sufficiency, the completed report and recommendation of the FEB are forwarded through command channels for review and, ultimately, MAJCOM commander action. There is no appeal process other than requesting the introduction of evidence discovered after the FEB has concluded.

While the FEB is non-judicial, many aspects of the board hint at judicial underpinnings. Examples include the language in the regulation regarding evidentiary rules, the use of oaths, and provisions for respondent counsel. An interview with a member of the Air Force JAG Corps, Maj Catherine Fahling, confirms the judicial nature of the proceedings.[136] According to Maj Fahling, the FEB process contains "aspects that are akin to the court martial process," but is purposely kept under the control of operators—pilots and WSOs. This keeps the FEB from devolving into a legal morass and also ensures that only aviators judge the fitness of aviators in the performance of aviation duties.

As mentioned above, the FEB covers a variety of issues associated with rated officers, but the term that specifically applies to the subject of acute combat fear and stress is *fear of flying.* According to AFI 11-402, "Fear of flying is not limited to an expression of a general fear of flying. It includes attempts to categorize fear of flying by theater of operations, aircraft mission, or type of aircraft."[137] As written, this term encompasses a wide variety of scenarios and the gravity of the term is reiterated in numerous procedural steps in the instruction. One example of this is language directing commanders of an officer professing a fear of flying to counsel them regarding AFI 36-3206 and direct them to the Area Defense Counsel.[138] In the first case, AFI 36-3206 covers administrative discharge procedures for commissioned officers and states that "the

[135] AFI 11-402, Para. 4.5.
[136] Maj Catherine Fahling, Air Force Judge Advocate General School, Maxwell AFB, AL, interviewed by author, 5 January 2005.
[137] AFI 11-402, Para. 3.7.1.3.
[138] AFI 11-402, Para. 3.7.1.3.

Air Force considers professed fear of flying as professional dereliction."[139] In the second case, the Area Defense Counsel is the Air Force's version of a defense lawyer. Also according to AFI 11-402, the senior member of any FEB proceeding where a rated officer declares a fear of flying in testimony must stop the proceeding and counsel the officer in a similar fashion.[140] In short, the term *fear of flying* precipitates a host of legal and administrative actions.

The use of the term *fear of flying* in the regulations also coincides with some of the language used by mental health professionals, but there are additional terms that correspond to different administrative actions. For example, the *Waiver Guide* states that *fear of flying* is only used by clinicians to describe rated aviators, while *manifestations of apprehension* is used to describe the same set of symptoms in student aviators. The result of this delineation between students and graduates is that the FEB process is not used for student aviators who demonstrate an inability or unwillingness to perform aviation duties, whereas graduates exhibiting the same behavior would be sent to an FEB. The use of a different diagnostic term appears to make it easier for the Air Force to administratively separate what is arguably the same issue.

Other Tools

The FEB gives commanders an important tool, but it is a rarely used tool in the operational fighter force. I have witnessed only one FEB during the course of my 14-year career (it was not related to combat fear and stress) and discussions with fellow fighter pilots confirm its infrequent use.[141] It appears that contemporary commanders use a variety of approaches, including those tried by commanders in past wars, to deal with questionable pilots.

One approach involves transferring the pilot to a non-combat aircraft or a non-flying job. Fighter pilots regularly fill positions as instructor pilots at Undergraduate

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[139] AFI 36-3206, *Administrative Discharge Procedures for Commissioned Officers,* 9 June 2004, Para.3.4.
[140] AFI 11-402, Para. 4.4.18.
[141] Unfortunately, multiple requests for FEB data (number, type, transcript) were unsuccessful. The major commands responsible for adjudicating the FEBs do not maintain these statistics, and the personal nature of the records would have required multiple requests in accordance with the Freedom of Information Act (FOIA). In this regard, knowing what to ask for is problematic. I am aware of at least one FEB related to combat fear and stress that was conducted at Spangdahlem AB, Germany during or immediately following Operation Allied Force.

Pilot Training (UPT), as air liaison officers (ALO) assigned to army units, and staff officers at various headquarters. This technique can allow a pilot to 'gracefully' continue his career, albeit outside of combat aviation. It also relies on an informal self-selection process (the idea that the pilot will not pursue additional combat flying assignments) and word of mouth (the 'real explanation' why a pilot is pursuing a non-standard career path or not wanting to return to fighters) to succeed. Unfortunately, this can circumvent the important process of performance documentation that protects the Air Force as a whole from putting the wrong person in a critical position.

Other approaches include restricting the mission profile that a pilot can fly. This implies less than full qualification, and it is virtually impossible to hide that information from a pilot's peers. The questionable pilot's effectiveness is subsequently diminished, and the 'special treatment' can be harmful to unit morale. The same is true when a pilot can only fly with certain personnel such as instructors or squadron leaders.

Short of reassignment or restriction, commanders have access to mental health professionals and clergy to help counsel troubled pilots, but the lack of uniformity in experience and situations makes uniform solutions virtually impossible.

Conclusion

The Air Force's organizational response is the product of many factors including historical experience, fighter pilot personality and culture, leadership challenges, and medical language. Administrative terms notwithstanding, the natural result of this language and the FEB process is that any mention of fear of flying (to include a specific theater, aircraft, or mission) can become grounds for administrative actions resulting in the loss of flight status and, potentially, discharge from the Air Force.

Commanders play a significant role in this decision-making process, and for aviators there is a significant vocational risk whenever the issue is raised. This reinforces the previously discussed disinclination to seek the aid of mental health professionals, and it further stifles peer-to-peer discussions that could come to the attention of the squadron commander. In effect, a pattern of silence is administratively reinforced, and the conditions are set for acute combat fear and stress to go unreported, uninvestigated, and

untreated. What follows is an attempt to determine whether acute combat fear and stress affects contemporary airmen.

Chapter 4

Combat Stress Survey[142]

Discussions of acute combat fear and stress usually produce anecdotal or apocryphal stories. Information is often second-hand, lacking details and accuracy in many cases. Even first-person narratives can omit important details or background information. In order to confront this problem and generate data about occurrences of acute combat fear and stress, the Combat Stress Survey was developed and administered to fighter pilots from the active duty Air Force, Air National Guard, and Air Force Reserve. This chapter will address the methodology, the instrument itself, and the findings.

Methodology

The Combat Stress Survey represents a combination of two nonprobability sampling types: *convenience* and *expert choice*.[143] The target population was all Air Force fighter pilots and weapon system officers.[144] This population is, however, quite large with more than 16,300 pilots and navigators on active duty alone, and it is also scattered worldwide.[145] As a result of the size and potential contact problems of the target population, the survey population was narrowed to a portion of the fighter pilots currently based in the United States and serving in fighter squadrons.

Surveys were mailed to squadron commanders of 33 active duty squadrons and 15 guard and reserve squadrons.[146] Of these squadrons, 15 are training squadrons responsible for qualifying pilots and weapon system officers (WSOs) to fly a particular fighter aircraft. Four surveys were mailed to each operational squadron, and commanders were asked to give the surveys to "senior, experienced aviators." In the case of the 15

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[142] The survey was approved by Air University and the Air Force Personnel Center (AFPC/DPAFFA). The control number for this survey is USAF Survey Control Number 05-013 (valid through 30 June 2005).
[143] Graham Kalton, *Introduction to Survey Sampling* (Newbury Park, CA: Sage Publications, Inc., 1983).
[144] In keeping with previous convention, the term *fighter pilot* will be used throughout to connote both pilots and weapon system officers.
[145] Air Force Personnel Center, "Regular Officer Career Families by Field, Rank and Gender," n.p., on-line, Internet, 7 February 2005, available from http://www.afpc.randolph.af.mil/demographics/ReportSearch.asp.
[146] A complete listing of the squadrons can be found at Appendix A.

training squadrons, eight surveys were sent with similar instructions. The number of surveys and the delineation between squadron types attempted to capture data from pilots who were more likely to have flown in combat. Unlike operational squadrons with a preponderance of younger, less experienced pilots, training squadrons are typically manned by more senior pilots with two or more operational flying tours. A more thorough sampling of combat veterans would involve a survey of headquarter staffs as well as pilots who have either retired or separated from the Air Force.

The risk of bias associated with both sampling types is offset by the purpose of the survey—to verify the existence of episodes of acute combat fear and stress. As a result of the sampling type and the use of open-ended questions, statistical analysis of the data is virtually impossible. No statistical conclusions should be drawn from either the number of respondents or the number of episodes reported.

A secondary purpose of the survey was to gather data regarding fighter pilots' perspectives on the topic at hand. Due to the sensitivity of the subject matter, survey respondents were not asked to self-report their feelings or experiences with acute combat fear and stress. Instead, they were asked to report episodes that they had observed in other pilots. Respondents were also specifically asked to avoid identifying individuals by name, squadron, or call sign. This was meant to reassure them of the purpose of the survey and to encourage frank and honest feedback.

The use of open-ended questions was meant to encourage survey respondents to report their impressions and opinions. A specific definition of acute combat fear and stress was also omitted in order to capture respondent's perception of what qualified as appropriate incidents. Omitting a definition runs the risk of either confusing respondents who fail to understand the term or encouraging respondents to report episodes that might not be considered acute combat fear and stress. Given the intentionally broad definition used in this study and the open-ended nature of the survey, such over-reporting is either unlikely or easily recognizable.

The Survey Instrument

The entire survey is available in Appendix B, but a brief discussion of the overall structure and individual questions follows. The first two questions were designed to

immediately identify pilots who (1) had flown in combat; and (2) who had witnessed an episode of acute combat fear and stress:

1. *Have you ever flown in combat? [This includes operations such as Provide Comfort, Deny Flight, Northern Watch, etc…]*

   Yes / No

2. *Have you ever witnessed an episode of acute combat fear and stress in another aviator?*

   Yes / No

Question #1 intentionally included operations from the last 15 years that can best be described as low-intensity. Operation Deny Flight, Operation Northern Watch, and others often went months without a hostile act, but they have been included because the participants carried live weapons on every mission, logged combat time, and never knew if the enemy would choose to shoot at them on a given day. The inclusion of these operations is also meant to capture episodes that might have occurred under less obvious circumstances. In other words, there is an expectation that fear and stress accompany the first night of a war, but not necessarily the third month of no-fly zone patrols. Including these "operations other than war" can help confirm that belief or reveal the opposite.

If the respondent answered "yes" to both questions, the next series of questions was designed to capture some broad demographic information from the respondent: rank at the time; whether they were in a leadership position; if so, at what level; and what weapon system they were flying. This data will help describe the respondent population.

The remaining 11 questions ask the respondent to report on the episode and its resolution:

1. *Please describe your impression of the episode of acute combat fear or stress. (What triggered the response? What made you think there was a problem? How did the individual express his/her fear?)*

This is meant to gather general information about the episode including the respondent's perception of the cause and manifestations.

2. *How was this situation resolved? Was it dealt with by some portion of the chain of command (to include formal medical channels), or was it dealt with by peers?*

Questioning about the resolution attempts to understand the types of tools used—formal policy, commander's discretion, medical professionals, peer counseling, etc.

3. *Based on your knowledge, how high up the chain of command did news of this episode spread?*

This follows up on the previous question, and it starts to explore the extent to which the chain of command might be aware of these episodes. In addition to basic episode data, the survey is meant to help answer questions about an organizational response. In the Air Force, the chain of command plays a crucial role in this response.

4. *Are you aware of any policy guidance concerning combat fear or stress at the time of the episode? If yes, what type of guidance existed? Did you think existing guidance was adequate?*

This is an opportunity to find out what (if any) guidance existed at the time of the episode and the degree to which it was common knowledge. Depending on the policy and acceptance, a well-publicized policy could have dramatic effects on a fighter pilot's willingness to come forward about his or her fears. In most cases, however, it is unlikely that pilots in non-leadership positions would be aware of such guidance. This question also was designed to identify policy sources that were not uncovered during the research process.

5. *Did this change after the episode (new policy, changed policy)? How?*

This question helps understand how prepared the chain of command was to deal with this issue, and the extent to which they believed the guidance was sufficient at the time. There is a difference between being unprepared and unwilling to respond to a problem. If unprepared, then change should be forthcoming and its effectiveness can be examined. If unwilling, then change is less likely.

6. *What percentage of unit members beyond the immediate chain of command knew about this episode? Do you believe that this had an effect on the way the episode was handled?*

This question explores the idea that widespread knowledge of an episode might affect the way a commander or command deals with a problem of this type. If many people know about a problem, then a commander may feel compelled to be more demonstrative in his response—especially when it deals with a sensitive topic like fear.

7. *In your opinion, was this situation dealt with appropriately?*

This question is looking for respondent perceptions and opinions. "Appropriate" is a decidedly imprecise term and it may not be an adequate basis on which to judge the events. However, if many respondents report unease with the measures taken, then the response to this question opens the door to understanding these concerns.

8. *What would you have changed?*

This expands on the previous question, and it seeks potentially differing views about the way to deal with the problem.

9. *Approximately how long had you known the individual (years & months)?*

The duration of their relationship may affect the extent to which the respondent believes he or she understands the pilot experiencing the episode. A long term relationship is likely to strengthen the respondent's beliefs and perceptions.

10. *Did you have any idea that this individual was susceptible to acute fear or stress? If so, in what way?*

This explores a connection between perception of the individual and the likelihood of occurrence. This is not a primary line of inquiry, but in seeking a better way to handle the problem, the observations and opinions of peers may play a role in preemptively identifying individuals who are likely to have a problem with acute combat fear and stress.

11. *Is there anything else about this topic that you think is important from an understanding or management perspective?*

This is a final open-ended chance for the respondent to express opinion or comment.

Data

Of the 256 surveys mailed out, 94 were returned for a 36.7 percent return rate. One survey was incompletely filled out and discarded. Eight respondents indicated that they had not flown in combat and 85 respondents indicated that they had flown in combat. Of the 85, fourteen (16.5 percent) reported witnessing an episode of acute combat fear and stress in a fellow aviator. Twelve of the 14 respondents were lieutenants or captains at the time they witnessed the episodes, and the aircraft types included A-10,

F-15, F-16, and B-52.[147] Five of the 14 witnesses were in leadership positions, ranging from flight commander to squadron commander. The open-ended nature of the survey does not lend itself to a simple compilation or categorization of the responses. Some of the episodes are more focused than others, and some of the episodes are more compelling than others. As a result, the intent here is to summarize where appropriate and discuss at length a few of the more interesting cases. The discussion falls into the following categories: performance failures, anticipation, leadership reaction and unit morale, and policy.

Performance Failures As expected, some of the cases involved individuals who had difficulty or were unable to perform during a mission. These include a new wingman who told his flight lead that he wanted to leave the target area after getting shot at and a young flight lead leading in combat for the first time.[148] In both cases, a more experienced member of the squadron helped the individual get through the mission successfully and the episode data provided by the respondents supports the notion that this was fairly typical behavior. Also, the squadron commanders were made aware of the situation, and, apart from reinforcing internal policies to combine experienced and inexperienced aviators in the same element, neither episode resulted in policy changes or concerns. In the case of the wingman, the episode was shared with the rest of the squadron as a lesson learned.

Another example with less satisfying results was an F-16 pilot who refused to "roll-in" and release his bombs on his first three combat missions. After this, the pilot was grounded and sent to the air operations center (AOC) for the remainder of the war to act as a planning officer. Following the war, the pilot returned to flying with the squadron despite the fact that, according to the respondent, the entire squadron knew about the incident and that news of the episode reached the wing commander.

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[147] One respondent reported an episode experienced by a B-52 radar navigator during Operation Desert Storm. Apparently, the respondent has since cross-trained into a fighter aircraft. The reported episode was interesting because it raises a host of issues regarding crew coordination and response, but it falls outside the scope of study—fighter pilots and WSOs—and will not be discussed in detail.

[148] The basic fighting element used by USAF fighter aircraft consists of two aircraft—referred to as the *flight lead* and the *wingman*. Typically, two elements will be employed together as a four-ship—made up of a flight lead, wingman, element lead, and wingman—allowing for the elements to split as required while still maintaining mutual support.

Anticipation The look back at World War II highlighted the relationship between combat intensity/attrition and the overall amount of stress that combat crews were able to endure. Obviously, there was a great deal of variance on an individual level, but the increased survivability that came with later stages of the war allowed commanders to increase tour lengths. This idea of high intensity combat operations and expected casualties leading to an increased number of stress episodes appears to be present in the results of the Combat Stress Survey. The survey did not ask respondents to identify the operation or war where they witnessed the episode of acute combat fear and stress, but many did in the course of their response. Five surveys were returned that specifically mentioned Operation Desert Shield/Desert Storm and they all relayed episodes from the months leading up to the war or the first few days of combat.

In one case, an A-10 pilot grew increasingly concerned and agitated in the run-up to the war. His concerns ranged from potential infidelity on the part of his new wife to fear that the Iraqis would single him out for death in the case of his capture because he was Jewish. The pilot began to openly confront his widely-respected squadron commander, and he repeatedly used the Saudi phone system to call his wife—a violation of the security rules. He was grounded for a brief period, but the culminating point was reached when his roommates found him crying in the middle of the night. The pilot reported that he had thought about killing his squadron commander that day. Apparently, after having his aircraft armed for a training mission, the pilot noticed the squadron commander observing operations from a vehicle parked nearby. The pilot wanted to shoot the commander with his aircraft's 30mm cannon, but chose not to because his flight lead was in the line of fire.

Another episode came from an F-15 pilot. The night prior to the beginning of Desert Storm, Brig Gen Buster Glosson met with the squadron and gave them a motivational speech. In the course of the speech, he also relayed his personal estimate of aircraft losses. While the respondent did not remember the specific numbers, Glosson had previously told President Bush that the coalition would certainly lose no more than 80 aircraft and probably less than 50.[149] The pilot reported that later that night "there

[149] Department of the Air Force, *Reaching Globally, Reaching Powerfully: The United States Air Force in the Gulf War* (Washington, DC: Government Printing Office, 1992), 34.

were numerous grown men of various ranks enjoying restless sleep. I heard many people talking in their sleep and startling shouts. You could tell that tensions were high."

An F-16 pilot on his second combat mission during Operation Desert Storm performed approximately seven threat reactions[150] during a 10-minute period over Baghdad, and another F-16 pilot complained of "head colds and sinus issues" after two days of combat. In that particular case, the pilot did not fly for the remainder of the war. Finally, a young wingman showed a trend of over-reacting to relatively minor occurrences during combat missions, including reporting contrails as inbound Scud missiles and threat reacting to a short-range missile system that was too far away to be a threat to his aircraft. This pilot was also found "blubbering on the phone with his wife, almost like he was trying to paint things as more serious than they were."

Leadership Reaction and Unit Morale One of the most interesting themes that emerges from the survey results is the almost universal unwillingness of commanders to take actions that would result in long-term negative implications for the affected pilots. This was even true in the few cases where the respondent knew the episode was reported up the chain of command (beyond the squadron commander). In the most serious cases—A-10 pilot wanting to kill his commander, F-16 pilot unwilling to drop his bombs, psychosomatic "head colds and sinus problems," and another pilot unwilling to employ his missiles—the pilots were not subject to a Flying Evaluation Board (FEB) and were allowed to resume flying after the end of the war.

The homicidal A-10 pilot was returned to the United States prior to the start of the war where he resumed flying with a sister squadron that did not deploy and, apart from a psychological evaluation and the harm to his reputation, life returned to normal. The only action taken by the commander was to ensure that the pilot did not return to his original squadron after the war. In the end, the pilot was allowed to retain his status as a *combat mission ready pilot*.[151]

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[150] A threat reaction is an aggressive maneuver by the pilot to defeat either anti-aircraft artillery (AAA) or a surface-to-air missile (SAM). The threat reaction is done in self-defense, but it often has negative effects on the aircraft's energy state, mission timing, element mutual support, or attack parameters. Unnecessary threat reactions can put the aircraft and element at risk by prolonging exposure to additional AAA or SAM threats.

[151] This term applies to pilots who have been certified by the squadron commander to perform the unit mission in time of war. Fighter pilots strive to maintain this status by completing an established number of flights and training events on an ongoing basis.

Other examples of less-than-severe punishment include the trend of sending pilots to be planning officers at the AOC or limiting their mission profiles to less-threatening missions. Sending a pilot to the AOC appears to be a way of putting them "out of sight and out of mind," but, again, the respondents report that the pilots were allowed to return to normal flying duties when the shooting stopped. The use of assigning less-threatening profiles came from a respondent's report of a wingman (F-16 pilot during Operation Allied Force) who failed to shoot when given the chance. In that particular case, the respondent felt that the measure was appropriate in light of the short-duration and low-intensity of the conflict and because he also knew that the questionable pilot was planning on getting out of the Air Force.

There is nothing in the surveys to suggest a rationale for such lenient treatment, but these respondents expressed a certain amount of disdain that harsher measures were not taken. Two respondents stated that the questionable pilot should have been subject to an FEB, and another believed that the pilot should have been re-assigned to a non-combat aircraft.

In almost all cases, the respondents expressed concern about the effects that these pilots had on their squadron, describing them as a "cancer" and "not very useful if things got real serious." This language is reminiscent of the historical documents quoted in Chapter 2, but the effects also lingered. The A-10 pilot sent home was eventually confronted by a lieutenant who stayed and fought the war. In the lieutenant's case, his flight lead was killed and the lieutenant was shot down and captured by the Iraqis. After the lieutenant's release, he found out that he would be in the same squadron with the questionable pilot. The lieutenant "went nuts, called him a pussy at length, then marched into the squadron commander's office and said he would not be in the same unit with this guy who was afraid of combat. The captain stayed but they never spoke again."

A more disturbing example of a leadership response comes from an episode during Operation Desert Storm. After a harrowing experience over Baghdad (see the discussion of multiple threat reactions above), the F-16 pilot told his flight commander that "he didn't think he could do this." According to the respondent, the flight commander saw this as a weakness and told him that "you will never recover from this. Now get into pilot rest for tomorrow or else!" The pilot did as he was told and continued

to fly missions, but news of the episode spread to about half of the squadron. When asked what the respondent would have changed in dealing with the situation, he wrote, "Told the individual not to go to his flight commander. To have kept it to himself because he ended up by himself anyway."

Policy One of the goals of the survey was to inquire about existing guidance on the subject of acute combat fear and stress. None of the respondents reported any knowledge of policy guidance and none of them reported any changes in the aftermath of the episodes. This either indicates a lack of policy guidance or a failure to communicate existing guidance. One respondent stated that he believed the squadron commander had a great deal of latitude to deal with the situation as he saw fit. A related line of inquiry involved how much the chain of command knew about the episode and this was also not very productive. Most of the respondents appear to have been peers of the affected pilots, and, as a result, were not privy to any dialogue in the chain of command.

Instrument Critique

While this instrument shed some valuable light on the topic of acute combat fear and stress, it can be improved. As previously discussed, the survey purposely omitted a definition of acute combat fear and stress. This was done in order to capture the respondents' perceptions of what qualified as appropriate incidents. It also ran the risk of either confusing respondents who failed to understand the term or encouraging respondents to report episodes that might not be considered acute combat fear and stress. A review of the data reveals that three of the respondents reported episodes that only vaguely (if at all) meet the definition of acute combat fear and stress. One F-16 pilot included a broad description of how his squadron reacted to combat operations, reporting about the way squadron members shared their experiences and how tactical communications are often the first thing to degrade in combat. Another pilot self-reported his experiences with fatigue—harmlessly dropping a 2,000 pound bomb short of the intended target.[152] This particular response also reveals the importance of specifying the difference between stress and fatigue. While fatigue is often a product of fear and

[152] The incident occurred as a part of a "show of force" exercise, and, fortunately, no one was injured. This pilot was deeply concerned that fatigue resulting from extended missions—10 hours long in the middle of the night—and inattention to rest policies could result in a more deadly outcome.

stress, it tends to be more about the physiological response than the psychological response. Finally, a pilot reported at length on his impressions of the circumstances surrounding a friendly fire incident involving an F-16 and a Patriot surface-to-air missile system. In this case, the respondent reported a number of tactics and policies that he believed contributed to the incident, but nothing was reported about the pilot who destroyed the Patriot radar. In order to avoid this extraneous reporting, a brief definition of acute combat fear and stress would be helpful.

Another improvement would be the inclusion of second-hand information. In other words, the survey should allow respondents to report episodes that they have not witnessed. One respondent indicated that his wife was "very good friends with a girl who's husband would come home crying from the stress of [Operation] Allied Force bombing … never got to the squadron leadership," but he failed to elaborate because he had not witnessed the episode personally. The obvious danger is that accuracy and perception can be distorted in the re-telling of stories, and the data should be tempered accordingly. However, this would likely increase the overall amount of information that is being gathered as a part of the survey effort, and it would almost certainly be informative.

The last area for improvement involves the target population and the nature of the survey. Having shown that acute combat fear and stress remains an issue in the Air Force, a more interesting line of inquiry is the response of commanders to these episodes. While the current survey attempts to garner this information, it lacks the ability to pursue the thought processes of commanders. Their actual response is reported in the current instrument, but there is more to understand than observed behavior. Specifically, a survey could inquire about the type and quality of the training they had received or whether they felt compelled to pursue a course of action that would have long-term impacts on the affected pilot's career. While a target population of current and former fighter squadron commanders would be more useful, developing a viable database could prove challenging and time consuming.

Conclusion

The picture that emerges from this survey is one of an Air Force that continues to deal with the problems of combat stress, albeit informally, on a limited scale, and to the benefit of individuals rather than the organization. There is no way of quantifying these results and it is difficult to envision a way of getting an answer to the question of frequency. Perceptions, definitions, and, to some extent, expectations about normal combat stress all present fundamental challenges. Nevertheless, the existence of the problem in the contemporary Air Force has interesting policy and training implications for the future.

The Combat Stress Survey was a useful instrument to attain somewhat limited objectives. It opens the door to further study and there are many branches to pursue. While the responses reinforce some of the expected behaviors (disdain for those who could not handle the stress), it also calls into question the actions (or inactions) of commanders. In the end, the variety of responses and nature of the commentary point to a problem that contains a broad spectrum of experiences and outcomes.

Conclusion

> *The primary motivating force which more than anything else kept these men flying and fighting was that they were members of a group in which in which flying and fighting was the only accepted way of behaving.*
>
> *- The Aviation Psychology Program in the Army Air Forces, Report No. 1*

This study sought to understand how the Air Force deals with pilots who are unable to handle the stress of flying in combat. The literature and historical reviews helped set the stage, while the contemporary analysis and survey results provide a point of departure for the following observations. Two groups came to the forefront when addressing the historical aspect of the research question—commanders and flight surgeons—but the contemporary analysis and survey point to a third group—the pilots themselves—that merit inclusion when analyzing the Air Force's organizational response to the problem. Their unwillingness to discuss the issues of fear and stress, the cultural pressures to avoid doctors, and concerns about career-ending administrative actions all contribute to a climate that suppresses the issue from within the organization.

The Air Force's answer to combat fear and stress from World War II through Vietnam turns out to be a matter of assessment, treatment, and prevention. While commanders were often the first to see the signs of emotional stress, flight surgeons performed the crucial role of diagnosis and treatment, all with an eye towards restoring the men and the mission. In a small number of cases, the affected pilots were discharged, but the majority of those suffering from combat stress were treated and returned to flying duty. Commanders and flight surgeons also sought to prevent these emotional casualties with stern leadership and creative personnel policies such as tour limits, leave periods, and mission whiskey.

Throughout this period, a variety of terms were created to properly diagnose or categorize the various symptoms or problems being experienced. The three-tier system devised by Eighth Air Force attempted to categorize men with respect to their medical diagnosis and appropriate administrative response in an effort to answer two key questions: What is his mental state? And, Has he done his duty? Emotional casualties fell

into one of three categories: secondary flying fatigue, lack of moral fiber, or psychosis. The most extreme mental cases (psychosis) received treatment (and a discharge), but a determination was made for the other emotional casualties regarding whether the amount of trauma experienced was "creditable" or not. If not, the individuals were considered to have a lack of moral fiber and the focus of the organizational effort became administrative—removing their wings and reclassifying them into ground-based jobs or discharging them altogether. Those with secondary flying fatigue were still considered unfit for duty, but the emphasis of the organizational response was on treatment and restoration rather than punishment.

These administrative procedures continued in Korea and Vietnam, but the colorful language was dropped and the explicit marriage of diagnosis and administrative response was subsumed within a broader policy—the Flying Evaluation Board (FEB). The FEB was devised as a means to deal with pilots who were unable or unwilling to satisfactorily perform aviation duties. Both today and in the past, the FEB process has had a wide charter, and it calls for a determination of medical fitness as a routine course of action. There has never been anything in the regulations to account for "a creditable amount of trauma," but the board members—all aviators—rely on their personal and professional experiences when evaluating the fitness of the pilot. In essence, the FEB today goes through the same steps that Eighth Air Force came up with in World War II, albeit without the separate categories.

Initially, I believed that the Air Force's use of *fear of flying* in regulations and administrative proceedings was misleading and problematic. It appeared to be too broad and non-specific to properly describe the different cases of acute combat fear and stress. Moreover, specific terms like *secondary flying fatigue* and *lack of moral fiber* had the attractive quality of being useful to physicians and commanders alike. Both groups could use the same language even though their purposes differed. Unfortunately, different terms did little to change the outcome—the Air Force lost a pilot regardless of the diagnosis. The only remaining question was whether the pilot was considered "yellow" or not. As such, the move away from specificity is quite understandable.

The idea of duty and "creditable trauma" is a recurring theme in the policy letters and personal accounts from World War II to Vietnam. On an individual level, there was

a desire to explain why a pilot was unable to perform, and the implication is that a "creditable amount of trauma" equated to an honorable explanation (as opposed to being "yellow"). Organizationally, however, the outcome remained the same—the Air Force had one less pilot, and so the use of a blanket term (*fear of flying*) to cover men with a variety of experiences and emotional states makes sense. Flight surgeons could apply medically accurate terms for the purpose of treatment, but the war-fighting Air Force only cared whether or not the man was fit for aviation duty. The FEB might disqualify a pilot for *fear of flying*, but the officers on the FEB (as well as commanders by way of written report) knew the details behind the case.

The Combat Stress Survey indicates that acute combat fear and stress still exists in the Air Force, but commanders confronted with pilots who were either unwilling or unable to fly in combat apparently pursued temporary solutions rather than more permanent administrative actions through the FEB. In fact, the survey did not return a single case where a pilot was sent to an FEB. This finding was a surprise and it remains an area for further study.

One potential explanation is that squadron commanders had developed a personal relationship with individual pilots that deterred them from "ruining" a pilot's career—the perceived worst-case outcome of the FEB. Another possible explanation is that the commanders did not want their other subordinates to perceive them as being unduly harsh, and yet another possibility is tied to the amount of administrative work required by an FEB in the midst of preparing for or continuing combat operations. As Jack Broughton put it, "I was so engrossed in trying to punish that individual [who quit after being shot at] that I didn't pay the proper attention to all my charges who were laying it on the line."[153]

Whatever the rationale, commanders should be aware that the other men and women in the squadron have their own expectations about how these pilots should be treated. Many of the survey respondents expressed shock and dismay that pilots who could not handle combat were allowed to return to normal flying duties after the war was over. This does not imply a lack of compassion on the part of the respondents, but there

[153] Jack Broughton, *Going Downtown: The War Against Hanoi and Washington* (New York: Orion Books, 1988), 131.

is an implication of special treatment and unjustness. Such concerns are not without merit. In the extreme, the question could be asked, "What if every pilot failed to perform in the face of combat?"

Even if the problem is isolated to one or two pilots in a squadron, there remains a potential for friction and hard feelings. In the case of the F-16 pilot during Operation Allied Force who was assigned "easy" missions, the obvious result was that the other pilots were assigned the "hard" missions. Words like "easy" and "hard" mask the fact that the degree of difficulty equates to personal risk in combat and the rest of the pilots probably resented the extra risk that they incurred as a result of that individual's shortcomings. It may be flattering to be assigned the difficult mission on the first night of the war, but the novelty likely wears off when the risk or reality of combat losses increases over the course of repeated missions.

There is no simple policy solution to acute combat fear and stress, but that does not mean that the Air Force should shoulder squadron and wing commanders with the burden. As this work shows, the Air Force has a long history of grappling with this tough subject and the policies and challenges of past wars can be instructive today. Understanding the three different groups—commanders, flight surgeons, and pilots—that together account for the organizational response is one way to appreciate the challenges of the topic, but the issue of crafting an effective and useful policy is crucial to moving ahead.

I have shown that the FEB, despite being considered a serious undertaking, serves the Air Force well in the area of combat stress. However, it is a tool that is only reluctantly (if at all) being used. As part of a new policy, the FEB should be restored as a viable and expected tool for commanders. I do not propose a change in the regulation, but senior leaders should find a vehicle to open a dialogue with airmen about when and how the FEB should be used. In the past, policy letters from the Chief of Staff (typically four to five pages in length) provided a means to expand the discussion in a contemporary context as well as communicate their personal feelings. A similar letter today would have the same effect—in addition to conditioning airmen of all ranks to think about this topic now rather than in the run up to, or during, a war. Additionally, it could become part of the training programs for new flying squadron commanders

conducted by the major commands. Commanders should also be trained to recognize the early indicators and symptoms of stress that can be mitigated with relatively minor intervention or rest, and experienced senior officers could provide examples of different ways to handle these cases.[154] Ideally, the Air Force should leverage its history to prompt the kind of dialogue and thinking that saves lives in combat.

As this study has shown, commanders play a crucial role in dealing with the emotional and physical stresses of combat. They do not automatically consider an FEB when confronted with combat fear and stress, and, in most cases, this is appropriate. Their knowledge of the men and women under their command, their creativity in seeking solutions, and their professional judgment should remain paramount and not be automatically second-guessed (as some might think I have done in the preceding discussion of the survey results). Nevertheless, commanders need to forcefully confront fighter pilots who cannot perform their designated function. The Air Force can not operate as a flying club. It demands combat capability and a fighter pilot unable or unwilling to perform his or her duty should stand before an FEB. The Combat Stress Survey indicates that what appears to be missing is a threshold that, once crossed, suggests that the commander sends a pilot to the FEB. This needs to be a subject of discussion in flying squadrons throughout the Air Force. Defining and communicating standards of expected behavior is an important aspect of command and the Air Force's organizational response should be a fair and compassionate extension of this policy.

[154] For an excellent discussion of the manifestations of stress, the role of leadership, and the need for education in dealing with airmen and combat fatigue, see Lt Col Mark K. Wells, "Aviators, Air Combat, and Combat Stress: An Air Force Commander's Primer" (study project, U.S. Army War College, 1993).

Appendix A

Survey Population: List of Fighter Squadrons[155]

Air Combat Command (ACC)	Unit Type
27th Fighter Squadron	F-15C
34th Fighter Squadron	F-16
333d Fighter Squadron	F-15E RTU[156]
334th Fighter Squadron	F-15E RTU
335th Fighter Squadron	F-15E
336th Fighter Squadron	F-15E
354th Fighter Squadron	A-10
357th Fighter Squadron	A-10 RTU
358th Fighter Squadron	A-10 RTU
389th Fighter Squadron	F-16
390th Fighter Squadron	F-15C
391st Fighter Squadron	F-15E
4th Fighter Squadron	F-16
421d Fighter Squadron	F-16
55th Fighter Squadron	F-16
522d Fighter Squadron	F-16
523d Fighter Squadron	F-16
524th Fighter Squadron	F-16
58th Fighter Squadron	F-15C
60th Fighter Squadron	F-15C
7th Combat Training Squadron	F-117
71st Fighter Squadron	F-15C
77th Fighter Squadron	F-16
79th Fighter Squadron	F-16
8th Fighter Squadron	F-117
94th Fighter Squadron	F-15C
9th Fighter Squadron	F-117

Air Education & Training Command (AETC)	Unit Type
1st Fighter Squadron	F-15C RTU
2 d Fighter Squadron	F-15C RTU
308th Fighter Squadron	F-16 RTU
309th Fighter Squadron	F-16 RTU
310th Fighter Squadron	F-16 RTU
61st Fighter Squadron	F-16 RTU
62d Fighter Squadron	F-16 RTU

[155] This is not a complete list of USAF fighter squadrons.
[156] Replacement Training Unit (RTU).

63d Fighter Squadron	F-16 RTU
95th Fighter Squadron	F-15C RTU

Air National Guard (ANG)	Unit Type
102 d Fighter Wing	F-15C
142 d Fighter Wing	F-15C
144th Fighter Wing	F-16
147th Fighter Wing	F-16
148th Fighter Wing	F-16
158th Fighter Wing	F-16
173d Fighter Wing	F-15C RTU
174th Fighter Wing	F-16
183d Fighter Wing	F-16

Air Force Reserve	Unit Type
93d Fighter Squadron	F-16
301st Fighter Squadron	F-16
302d Fighter Squadron	F-16
301st Fighter Wing	F-16
917th Wing	A-10 RTU
466th Fighter Squadron	F-16

Appendix B

Combat Stress Survey[157]

- This information is being gathered solely for use in a thesis at the School of Advanced Air and Space Studies, Maxwell AFB, AL. It will not be used for any other purpose.
- The goal is to gather information in an anonymous manner.
- Please do not identify individuals by name or call sign.
- No information will be attributed to you or your unit.
- No attempt will be made to connect you or the individuals discussed to actual times, places, squadrons, or events.

This questionnaire is designed to gather data about instances of acute combat fear and stress in USAF flying units. This is not intended to be a means of self-reporting these experiences, but please feel free to comment as you see fit.

Your frank and honest comments are greatly appreciated.

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3. Have you ever flown in combat? [This includes operations such as Provide Comfort, Deny Flight, Northern Watch, etc…]

   Yes / No

***** If you have NOT flown in combat, please stop now and return the survey via the enclosed envelope. *****

4. Have you ever witnessed an episode of acute combat fear and stress in another aviator?

   Yes / No

***** If you have NOT witnessed an episode of acute combat fear and stress, please stop now and return the survey via the enclosed envelope. *****

If you answered 'Yes' to the previous questions, please continue…

Respondent Profile:

1. What was your rank at the time you observed this episode?

   Lt / Capt / Maj / LtCol / Col

2. Were you in a leadership position at the time? Yes / No

[157] USAF Survey Control Number 05-013. Valid through 30 June 2005.

3. If so, what level? Flt CC / ADO / DO / SQ/CC / higher
4. What weapon system were you in at the time?
5. What was your job at the time? Pilot / WSO / Other:_____

Episode Data[158]

12. Please describe your impression of the episode of acute combat fear or stress. (What triggered the response? What made you think there was a problem? How did the individual express his/her fear?)
13. How was this situation resolved? Was it dealt with by some portion of the chain of command (to include formal medical channels), or was it dealt with by peers?
14. Based on your knowledge, how high up the chain of command did news of this episode spread?
15. Are you aware of any policy guidance concerning combat fear or stress at the time of the episode? If yes, what type of guidance existed? Did you think existing guidance was adequate?
16. Did this change after the episode (new policy, changed policy)? How?
17. What percentage of unit members beyond the immediate chain of command knew about this episode? Do you believe that this had an effect on the way the episode was handled?
18. In your opinion, was this situation dealt with appropriately?
19. What would you have changed?
20. Approximately how long had you known the individual (years & months)?
21. Did you have any idea that this individual was susceptible to acute fear or stress? If so, in what way?
22. Is there anything else about this topic that you think is important from an understanding or management perspective?

[158] Respondents were provided ample space to answer the questions. The actual survey averaged only two questions per page.

Appendix C

Historical Listing of Flying Evaluation Board Regulations

Regulations are listed in descending chronological order. These regulations also cover a variety of other related subjects in addition to FEB procedures. In most cases, the "basic" regulation is cited by its date of publication. I have not accounted for the multiple changes that are associated with each publication, but they are incorporated into the regulation and annotated by applicable date.

I compiled this list at the Air University Library (AUL), Maxwell AFB, AL. With few exceptions (marked), all regulations cited (to include changes) can be found in the AUL collection.

Designation	Date	
AFI 11-402	29 July 03	
	1 September 02	
	1 September 97	
	20 December 96	(Not located)
	1 July 95	
	25 July 94	
AFR 60-13 (Change 2)	21 November 88	
AFR 60-13 (Change 1)	18 May 87	
AFR 60-13	30 June 86	
AFR 35-13	2 January 86	
	1 June 81	
	1 April 76	
AFM 35-13	20 December 73	
	2 August 71	
	15 August 68	
	10 September 62	
	3 June 57	
AFR 36-57	29 March 56	
	13 January 53	
	10 February 50	(Not located)
Army Air Force Regulation 35-16	20 October 44	
	7 January 42	

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